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 24th, 2006

Volume VII

Pages 1305 to 1542

APPEARANCES

R.F. Peters		)Board Counsel
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Odette Fernandes		)
Bryon Williams		)CAC/MSOS
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Peter Miller		)TREE
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Jurgen Feldschmid		) CCEP
Michael Anderson		) MKO

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LIST OF UNDERTAKINGS

--- Upon commencing at 9:07 a.m.

THE CHAIRPERSON: Good morning, everyone. As we continue the Hearing, next up as Intervenors is CCEP, Mr. Feldschmid, I believe you have an associate with you?

MR. JURGEN FELDSCHMID: Yes, Mr. Chair, I do. First of all, good morning to you and to your fellow Board Members.

My name is Jurgen Feldschmid, I'm a partner with Duboff Edwards Haight and Schachter LLP. I am counsel for CCEP. With me here today is Mr. Will Gartner, who has just started articling with our firm and for those people who have a much longer involvement with this Board than I do, there may be some recollection that his grandfather had some involvement with the Board for an extended period of time.

THE CHAIRPERSON: I wondered if that was --

MR. JURGEN FELDSCHMID: Yes.

MANITOBA HYDRO PANEL:

VINCE WARDEN, Resumed
ROBIN WIENS, Resumed

CHIC THOMAS, Resumed

HAROLD SURMINSKI, Resumed

DAVID CORMIE, Resumed

CROSS-EXAMINATION BY MR. JURGEN FELDSCHMID:

MR. JURGEN FELDSCHMID: Let me turn immediately to the few questions that I have and I don't expect to be terribly long. And unlike some counsel in this room I really mean it when I say that. I've opened fire immediately, Bob.

And I expect most of my questions will be directed to Mr. Wiens as usual when we deal with all matters cost of service oriented. Let me just lay a certain amount of groundwork down, just to make sure that you and I -- particularly I, understand what it is that we're talking about in the area of the application -- the marginal cost weighting of the generation costs.

As I understand it, you are allocating generation costs to the various classes based on their use of energy at generation, correct?

MR. ROBIN WIENS: Correct.

MR. JURGEN FELDSCHMID: And then multiplying that by these marginal cost factors or multiples which have been derived by the use of historical price data from the surplus energy program, correct?

MR. ROBIN WIENS: Yes.

MR. JURGEN FELDSCHMID: And this data reflects some market price for electricity and is therefore a proxy for marginal cost?

MR. ROBIN WIENS: Yes.

MR. JURGEN FELDSCHMID: And -- but at the end of the day you're using those -- those multiples essentially to multiply what are -- embedded generation costs, correct?

MR. ROBIN WIENS: No, the embedded costs are not multiplied. The energy usage in the four time periods described in the cost of service study, that being summer period, peak and off peak, winter period, peak and off peak are weighted by the average prices over that period.

And then the weighted energies are summed for each of the classes across the four (4) time periods.

MR. JURGEN FELDSCHMID: What is -- but what is the mathematical operation to -- to achieve the weighting? Is it not simply a multiplication of the energy -- the energy amounts for the -- for the four (4) times period for the factor that applies at that time period?

MR. ROBIN WIENS: That's correct.

MR. JURGEN FELDSCHMID: Okay.

MR. ROBIN WIENS: That is correct. But your earlier question seemed to be suggesting that we then multiplied the embedded costs, which is not correct.

MR. JURGEN FELDSCHMID: Right. Okay. I apologize. And the four (4) time periods are winter off-peak, winter on-peak, summer off-peak and summer on-peak; correct?

MR. ROBIN WIENS: That's right.

MR. JURGEN FELDSCHMID: Now, I read somewhere -- and I was trying this morning to figure out exactly where that was but, among several hundred or even thousand pages, I wasn't able to find it before I came here this morning but I -- I seem to recall reading, and I believe it is the case, that this treatment of generation costs at these four (4) peak periods has a greater effect on residential and general service small because those classes tend to contribute more to -- to the high peaks.

Is that correct?

MR. ROBIN WIENS: Well, first of all, the four (4) periods, two (2) of them are peak and two (2) of them are off-peak.

MR. JURGEN FELDSCHMID: Correct. Focussing then just on the two (2) on-peak then. My --

my understanding is that because the -- the on-peak loads are -- are driven primarily by additional use from residential and from general service small, the smaller users, that therefore this particular model, the using of the on-peak, will tend to have more of an impact on the analysis for those residential users and small general service users.

Am I correct in saying that?

MR. ROBIN WIENS: More of -- of an impact than what? If you're referring to a system whereby we would classify generation costs entirely as energy-related and then not weight them at all, then going to an on-peek weening would in fact -- yeah, it would have a greater effect on the residential and general service small.

On the other hand, if you're talking about relative to the current approach to classifying generation, there's very little effect on the residential and general service small.

MR. JURGEN FELDSCHMID: When you say current you're talking about the -- the method of allocating energy -- or, sorry, the method of allocating generation costs based on energy use prior to the introduction of the -- the marginal cost factors; correct?

MR. ROBIN WIENS: Could you repeat that, please.

MR. JURGEN FELDSCHMID: When you say the current method, that is the method that has been used prior to the introduction of the marginal cost weighting factors that we see in the current recommended proposal; correct?

MR. ROBIN WIENS: The current method -- the current method utilizes -- first classifies the generation costs into a capacity component and an energy component. It's not a pure energy -- it's not a pure energy allocation.

MR. JURGEN FELDSCHMID: That -- yes, that's correct.

MR. ROBIN WIENS: So what the recommended method does is it -- it eliminates the capacity portion but it weights the on-peak periods. So there is an element of capacity in the -- in the allocation procedure by virtue of the fact that the weightings during the peak periods are higher.

So we capture a capacity component that way. And it's related to prices that we can observe and see. So we don't have an arbitrary classification anymore. We have a classification that's related to what the market is telling us about the value of energy during those different periods.

But, in fact, it -- it does not have a huge impact by moving from the current method, which is a capacity-energy split, to what we are recommending for generation classification and allocation, does not have a huge impact on the allocation of costs to any class.

MR. JURGEN FELDSCHMID: Is there an analysis that's already been done or can you provide an analysis indicating, even though it may be a very small effect, what that effect is?

MR. ROBIN WIENS: Certainly. That was provided by Manitoba Hydro with its rebuttal evidence, and I refer you to page 40 of 43 of that rebuttal evidence.

(BRIEF PAUSE)

MR. JURGEN FELDSCHMID: Thank you for that.

What I'm -- in the same area but from a different approach I noted that in the transcript for May 10, I believe it was Ms. McCaffrey's questioning of the Panel, around page 1096 there was a discussion of a movement from the current four (4) period system to a twelve (12) period system.

Do you recall that discussion?

MR. ROBIN WIENS: I do.

MR. JURGEN FELDSCHMID: And my understanding is that Hydro is at least open to the possibility of moving to a twelve (12) period classification system as opposed to the current four (4) period one (1), correct?

MR. ROBIN WIENS: Yes.

MR. JURGEN FELDSCHMID: And what I'm then wondering is whether, even though you say the effect may be small on, say, residential and general service small of moving from the capacity energy split system to the full energy marginal factor system, if I can call it that, what would the effect be of moving from four (4) -- a four (4) period system to a twelve (12) period system?

I would suspect that whatever -- whatever effect there would be on residential and general service small under the four (4) system, going to a four (4) system it would be alleviated by going to a twelve (12) -- a twelve (12) period system, correct?

MR. ROBIN WIENS: Well I'm -- I'm going to give you some numbers from the rebuttal evidence that I referred to.

On page 40 of 43 and I will use the residential class as a comparator. With the current system that is a capacity energy split we see that the residential class would attract 33.3 percent of the generation costs that's assigned to domestic customers.

Moving to Manitoba Hydro's recommended method with four (4) periods that is reduced from 33.3 to 32.6 percent. And when you go to the twelve (12) period it increases again -- back again slightly from 32.6 to 32.9.

So you see, all three (3) of the methods are showing variation within about .7 percentage points. For general service small, non-demand there is no change among any of the methods.

MR. JURGEN FELDSCHMID: I see that and, well, there goes that idea.

(BRIEF PAUSE)

MR. JURGEN FELDSCHMID: Let me then return to just a more of a -- more common theme for CCEP which is -- I would entitle this certainty that GSS is in fact overpaying.

And you and I have visited this ground before, Mr. Wiens, in that I have suggested to you that when you have a number of methodological approaches to test a particular proposition and they all tend to suggest the same thing over and over again, depending on -- not -- independent of what changes you might make, that when you look at the totality of that that tends to suggest or increase the robustness of the suggestion that what is being suggested by the results is, in fact, the case.

Would you agree with that?

MR. ROBIN WIENS: I don't have a problem with that.

MR. JURGEN FELDSCHMID: And so --

MR. VINCE WARDEN: Mr. Feldschmid, if I might. I do, as I've stated before in these proceedings, I do have a problem with the term overpaying. I don't think any customer is overpaying.

It's because of the allocation of the export revenues that the RCC's do end up coming up over one hundred (100), but it's not appropriate to say that customers are overpaying. They're receiving a share of export revenues that result in an RCC greater than one hundred (100).

MR. JURGEN FELDSCHMID: Thank you for that.

And -- and I -- just for clarification -- I -- I'm happy for the purposes of -- of this discussion now to say it's an RCC in excess of unity and it may be a certain number of percentage points over unity.

The particular argument spin we might want to put on it we'll leave to when we argue.

(BRIEF PAUSE)

MR. JURGEN FELDSCHMID: I just -- in -- in this -- continuing in this vein, I was wondering if in Volume 1, at Tab 11, page 40, I believe, there's a customer demand and energy cost analysis based on the recommended method.

(BRIEF PAUSE)

MR. JURGEN FELDSCHMID: Do you have that open to you or...?

MR. ROBIN WIENS: I think so.

MR. JURGEN FELDSCHMID: Okay. And one of the -- one of the features that I've noticed over, now, the third hearing that I've been involved in, is that there -- always at least superficially if you will -- there seems to be more of a deviation between the revenue-to-cost ratios for general service small, non-demand and demand, prior to export allocation than to -- in comparison to the other customer classes, than when you go to the right-most column and look at those same results with the export allocation being put in there.

Would you agree with that?

MR. ROBIN WIENS: Could you repeat that again. I'm -- I'm not sure that I'm understanding.

MR. JURGEN FELDSCHMID: Well, I just -- as I was preparing for this -- just a little calculation as follows. I calculated what percentage the seven -- 74.9 percent is of the 85.6 percent of, for instance, general service small non-demand, and came up with point -- point eight seven five (.875) or 87.5 percent.

When you move over -- that's under pre-export allocation. If you move over and do a similar analysis for the RCC after allocation of export and -- and see what percentage the 97 percent is of the 107 percent, it comes to point nine zero three (.903) according to my mathematics, or ninety point three (90.3).

And this suggests to me that residential is taking up a -- they've got a larger percentage or they're closer to general service in their RCC at the post-export allocation stage than they are at the pre-export allocation stage.

Would you agree with that?

MR. ROBIN WIENS: Well, that's what the

mathematic says, and subject to check, yes.

MR. JURGEN FELDSCHMID: And what I'm suggesting is that there seems to be some sort of an ongoing or -- or structural phenomenon happening where the allocation of export revenue to the classes tends to de-emphasise the -- what I would call over-contribution of revenue by general service small, although I -- I note, Mr. -- Mr. Warden's objections in -- in that regard.

Do you -- would you agree with that?

MR. ROBIN WIENS: Well, no, I would not agree with that. We've taken a number of different methods in this particular cost of service study for looking at how we allocate costs and also how we allocate net export revenues back to the customer classes. The numbers are -- they are what they are.

If the export revenue appears to have a bigger impact on the residential revenue cost coverage, then it's probably because the residential class has been picking up a larger share of the costs on a proportionate basis than the general service class to begin with so that the export revenue which is allocated back to the classes on the basis of, in the recommended case, on the basis of total cost incurred the residential class is going to get a larger share of -- of export revenue relative to the revenue that's provided to through the rates charged to the class itself, if you follow me.

MR. JURGEN FELDSCHMID: Is there any specific analysis that's been done to demonstrate that that's the case?

MR. ROBIN WIENS: I don't have specific analysis with me but it would not be difficult to do.

MR. JURGEN FELDSCHMID: Well, if I could seek then an undertaking to provide that but just so I'm -- to make a more general statement just to -- just to communicate to you fully or satisfy -- that I may be satisfied that I'm communicating to you as fully as I can the concern.

Every time I look at one of these revenue cost coverage analyses it always seems to be the case that general service small is, as we see here, 85.6 percent and 83.6 percent for RCC prior to export allocation.

And then that -- and that deviation looks quite significant in relation to the other classes and then you move over to the RCC post-export allocation and that gap seems to narrow.

That's -- that's the perception that I see. You're saying that there is a -- an explanation that does not depend on what I would call over contribution of revenue by general service small and that's what I would be seeking for you to demonstrate in the undertaking.

--- UNDERTAKING NO. 22: Provide analysis of Revenue Cost Coverage to Mr. Feldschmid

MR. ROBIN WIENS: Absolutely. It -- it is related to them. It's related to the -- to the arithmetic of how these things are calculated. Residential picks up costs, particularly of generation and transmission, but also of distribution, related to its usage and the costs are probably per unit or per -- or certainly per unit of revenue are higher than for the general service small class.

So when you do an allocation of export revenues based on something that is related to cost, mathematically the phenomenon that you are observing is bound to happen.

CONTINUED BY MR. JURGEN FELDSCHMID:

MR. JURGEN FELDSCHMID: Okay, thank you for that.

(BRIEF PAUSE)

MR. JURGEN FELDSCHMID: Looking at Volume 1, Tab 11, page 6 which is essentially a summary chart setting out the revenue to cost ratios under the current method, the NERA method, generation vintaging and the method that Manitoba Hydro recommends for the purposes of this hearing.

And you'll agree with me that looking across those methodological changes that residential is contributing more revenue in relation to its costs but still remains less than unity; is that correct?

MR. ROBIN WIENS: Yes.

MR. JURGEN FELDSCHMID: And the larger general service large 30 to 100 kV and above 100 kV are contributing less and moving toward unity; correct?

MR. ROBIN WIENS: Yes.

MR. JURGEN FELDSCHMID: And whereas GSS non-demand and demand continue to be above unity across all of these methods and, in fact, if you look at the recommended method, appear to be going -- well, certainly for non-demand, in an upward direction away from unity; correct?

MR. ROBIN WIENS: Yes.

MR. JURGEN FELDSCHMID: And referring to page 28 of the Hydro rebuttal evidence where Hydro undertook an application of Mr. Lazar's approach using pure marginal cost but without his environmental externalities, GSS is the highest, is that correct?

MR. ROBIN WIENS: Yes.

MR. JURGEN FELDSCHMID: A further analysis at page 28 using Mr. Lazar's approach of pure marginal cost of supply and adding, as well, marginal cost of, I believe, it's additions or expansions to the transmission and distribution systems, GSS in that analysis again is the highest, correct?

MR. ROBIN WIENS: Yes.

MR. JURGEN FELDSCHMID: I note, as well, that in the Hydro's response to PUB/IR I-1 -- just a moment.

(BRIEF PAUSE)

MR. JURGEN FELDSCHMID: Yes, thank you it's PUB I-1(d), there's an analysis done in that IR based on an analysis done in the NERA time of use and inverted rate study. Again that shows general service small is over contributing and it's in fact -- general service small non-demand is the highest over contributor of the classes shown there, correct?

MR. ROBIN WIENS: Well, Mr. Feldschmid --

MS. PATTI RAMAGE: I was just going to ask for the reference again?

MR. JURGEN FELDSCHMID: Sorry, it's PUB/MH- IR-I-1(d).

MR. ROBIN WIENS: Mr. Feldschmid, first of all, this is done in a relative sense, this analysis. It is not an absolute measure of over-contribution or under- contribution.

That -- that particular table is reference to a measure of, for each class, revenue to marginal cost. No class is above 100 percent on an absolute basis. The classes collectively are somewhere around 60 percent if my memory serves me correctly.

So the -- the measure of, whatever it happens to be, and I suspect it's somewhere in the order of 120 percent is relative to that 60 percent. So first -- that should be first of all understood.

So all the classes are below 100 percent. The general service small non-demand class is the least far away from 100 percent.

Secondly, the marginal cost information in that table and I believe it's stated there, is not complete. There needs to be some additional work done to recognize marginal operating costs and marginal customer service costs.

These are concentrated at the customer end of the distribution system. So that when those marginal costs are added into the equation, if they were to be added into the equation, they would affect residential and general service small non-demand to the greatest extent.

So those are the caveats that are on those numbers. But, subject to those caveats, yes, you're correct.

CONTINUED BY MR. JURGEN FELDSCHMID:

MR. JURGEN FELDSCHMID: On that last point, they would have the greatest influence on residential and general service small in what direction? Tending to show a lower revenue to cost ratio or a higher one?

MR. ROBIN WIENS: Lower.

(BRIEF PAUSE)

MR. JURGEN FELDSCHMID: Just so I'm clear on the -- clearer at least -- on the -- on the meaning of the information in this particular IR, it is not the case I take it then that the revenue -- or, sorry, the -- the ratios that are shown are significantly below unity simply because export revenue has not been allocated back in.

Is that correct?

MR. ROBIN WIENS: There's no consideration of export revenue in those numbers.

MR. JURGEN FELDSCHMID: Is --

MR. ROBIN WIENS: Those are -- those are domestic revenues divided by estimated marginal costs.

MR. JURGEN FELDSCHMID: Could it be said then that the -- the ratios that are shown in this IR are in any way analogous to the pre-export ratios that we see in -- what is it -- the customer demand and energy cost analysis tables?

MR. ROBIN WIENS: No. No, Mr. Feldschmid. They simply reflect the fact that rates to Manitoba's domestic customer classes, which are based on embedded costs less export revenue, are significantly below marginal costs. That's what they reflect.

MR. JURGEN FELDSCHMID: Okay. Thank you.

(BRIEF PAUSE)

MR. JURGEN FELDSCHMID: I want to turn now to the issue of class consolidation and just confirm at this point the -- there has been some discussion in this application and in its material about class consolidation and, shall we say, a certain amount of musing out loud perhaps by Manitoba Hydro about potential class consolidation.

But I take it at this point, for the purposes of this hearing, Manitoba Hydro is not seeking to consolidate any of the classes that currently exist.

Is that correct?

MR. ROBIN WIENS: We have no specific proposal at this time.

(BRIEF PAUSE)

MR. JURGEN FELDSCHMID: And this is going to be my final question.

Let us say -- and I'm directing this primarily to Mr. Warden but someone else may answer -- let us say that, Mr. Warden, Mr. Brennan calls you from his office down to your office and says, Look we've got to give these small business and non-residential ratepayers a break, They've been consistently -- well, what would he say?

I guess he would say, They've been consistently above unity, well above unity on the RCC's, and would leave it at that, These people are the salt of the earth, the backbone of the Manitoba economy and so I want you to knock off their rates so they come down to unity.

Does -- if Manitoba Hydro were to come to that -- that epiphany, are they at this time in a position to -- have they done the necessary analysis, do they have available to them the necessary information to reduce general service small rates down to -- to unity, to reduce the -- the -- reduce the rates so that the RCC's are equal to unity?

MR. VINCE WARDEN: Mr. Feldschmid, I can never foresee a situation where Mr. Brennan or anybody else would -- would suggest that the small general service have a rate decrease. As I indicated before, I firmly believe -- Manitoba Hydro firmly believes that the small general class -- no class is overpaying.

Does it have an impact on what rate increase we would recommend to this Board in the future? Absolutely. Absolutely, we look at those ratios. And the fact that general service small is the highest RCC relative to the other classes would have an influence on what the rate increase would be recommended to this Board.

But a rate decrease, no, I cannot foresee that happening.

MR. JURGEN FELDSCHMID: Never -- nevertheless, whether it's within the realm of possibility or not, if -- if such a decision were to be taken, the -- the Corporation as of the moment, as I understand it, is -- is in a financial position whereby bringing the general service classes to unity would have a revenue impact that is manageable. It certainly wouldn't push the Corporation into any sort of a deficit; would it?

MR. VINCE WARDEN: Well, you know, one (1) good year doesn't really put us in a position we'd like to be in or should be in where as long as we're below that recommended or proposed or target that we're trying to achieve of the 75/25 that we keep talking about, then we are vulnerable to being in a deficit position in retained earnings which would be very bad for Manitoba Hydro and very bad for the Province of Manitoba.

MR. JURGEN FELDSCHMID: Let me leave off then if I could seek an undertaking or what the revenue impact or cost essentially would be to bring the GSS small demand and GSS small non-demand to unity; is -- that calculation I expect wouldn't be too difficult to provide? I think Mr. Wiens is doing it as I'm asking for it.

At least he has to use a calculator which gives me some hope. If he could do it in his head I'd really be worried.

THE CHAIRPERSON: Am I correct to interpret your question as one in which doesn't require an adjustment to any other class?

MR. JURGEN FELDSCHMID: Well, if there -- if there are going to be -- and I understand that rolling back GS -- general service small will have effects on the other classes. My primary interest is what the cost of just rolling back the class would be. The --

THE CHAIRPERSON: You mean the effect for that particular class?

MR. JURGEN FELDSCHMID: Well, the effect for that particular class but also to the extent that that rollback would have an effect beyond just the foregone revenue from that class to the Corporation across the system would be important as well, because my intent, Mr. Chair, is at least to explore and give some consideration to the possibility of making the argument, even though it may not be something that the Corporation is -- is -- is intending to go with, it may not be in the forefront of the mind of the Board, but to be able to make the argument that given the current financial situation of the Company that it would be no difficulty in providing that rollback to general service small from the point of view of the cost related just to that class but also the cost to the Company systemwide.

MR. ROBERT MAYER: Mr. Feldschmid, how does your question impact upon the methodology that is being recommended to this Board? I mean, you're talking about rates, we're talking about a cost methodology. I want to know which part of the methodology you think ought to be changed in order to solve the problem which you perceive?

MR. JURGEN FELDSCHMID: Well, let me address that in two (2) ways. Firstly, I'm just attempting to ensure that I have evidence available to me that I may use in final argument to make a particular submission to this Board. The Board may accept that submission, it may reject that submission.

In terms of methodological changes, I have explored earlier in my questioning one particular concern I've had. It doesn't seem that the concern that I had bore out in terms of the information I received from Mr. Wiens and I'm going to receive an undertaking from Mr. Wiens on that as well.

And so we may not have a particularly methodological change position to take. Nevertheless in -- in the world of paying electricity rates, less is always more.

THE CHAIRPERSON: Ms. Ramage...?

MS. PATTI RAMAGE: Oh, if I could just respond to that is ultimately this hearing is about cost of service and the questions being posed right now relate to rate changes and -- and that's not what this Panel came to discuss and I don't believe it's what the Board intends to deliberate on.

So I don't think the question is appropriate. And -- nor would any argument with respect to rate changes be the argument that I think addresses the issues that we've assembled to deal with.

THE CHAIRPERSON: I'm thinking -- I'm mindful of the comments of the Vice-Chair and yourself and also Mr. Feldschmid. I'm imagining that this doesn't take a lot of effort, to give a back-of-an-envelope estimate of what the impact would be on that particular class, to move it.

I suppose the argument to support Mr. Feldschmid's comment is that part of the COSS, of course, is the application of the ZOR, the zone of reasonableness, issues in methodology could potentially extend to the length of time it would take one to move to unity.

So I guess my basic question is, is it that complicated to give a back-of-the-envelope estimate of what the effect would be to affect one class and move it to unity?

It seems to me it's a fairly simple matter.

MR. VINCE WARDEN: The calculation itself is very simple. And we can certainly do that. Mr. Weins has done it, come up with a number of $15 million.

The real question is whether it's appropriate. And I guess I've been arguing all along or maintaining all along that -- is that -- as long as we're in the position of -- of having a debt-equity ratio that is below target, then it's just a question of what contributions we take from the relative customer classes in order to achieve that.

So the general service small categories and along with street-lighting is -- is in the happy circumstance of, over that period of time, likely contributing less. But refunding would, in the circumstance that we're in, would be -- would just not be something we would recommend.

We have done the calculation but it's certainly, as Ms. Ramage has pointed out, not relevant to these proceedings.

THE CHAIRPERSON: Yes. If you reduce it down to the simple question without getting into the general context as to its worthiness, I mean, you're saying it's $15 million?

MR. VINCE WARDEN: Yes.

THE CHAIRPERSON: Does that do it for you, Mr. Feldschmid?

MR. JURGEN FELDSCHMID: It does suit for my purposes of this hearing. And those are my questions. And I thank you very much to the Panel and to the Chair and the Board. Thank you.

THE CHAIRPERSON: Thank you, Mr. Feldschmid.

Before we discharge this Panel and ask Ms. Ramage if she has any re-direct, Mr. Peters, I'm wondering, are we keeping up a list of the various undertakings? I'm wondering if there's any supplementary questions we should be asking related to them?

MR. BOB PETERS: There is a list that is being maintained and I know Ms. Ramage is circulating them as soon as they are prepared. I'm not certain if any other parties have questions of this Panel before they're discharged.

I think the questions on the undertakings that -- that I have seen, we've asked our questions and that included questions of Mr. Cormie yesterday to finish it up. But it's probably a good question to ask others if they have any on the -- on the undertakings that have been circulated to date.

THE CHAIRPERSON: For the Panel, we'll reserve that right until we review, looking at what undertakings are still outstanding, but nothing immediately comes to mind.

Do any other parties here have any questions with respect to the undertakings that haven't been delivered on yet?

MR. BYRON WILLIAMS: I guess I don't know whether we have any questions until I see the responses. But I -- I think in terms of CAC/MSOS, I don't anticipate any. But there is one (1) undertaking from Mr. Cormie yesterday that -- that we're interested in looking at, but I -- I'm not expecting that we'll need the Panel recalled for that.

THE CHAIRPERSON: Professor Miller...?

DR. PETER MILLER: I believe Ms. Bowman asked for an undertaking on the elasticity, and I subsequently cross-examined in neighbouring areas.

Do you consider your verbal responses to my cross-examination to be the response to the undertaking to Ms. Bowman?

MR. ROBIN WIENS: Unless I'm otherwise advised by -- by Mr. Williams, yes.

MR. BYRON WILLIAMS: And I think I discussed this with Ms. Bowman, who's just in the other room, so she'll come in and club me if I'm misstating --

THE CHAIRPERSON: Obviously --

MR. BYRON WILLIAMS: It's fine.

THE CHAIRPERSON: -- the intercom works.

MR. BYRON WILLIAMS: We -- the undertaking was satisfied in terms of the oral response.

(BRIEF PAUSE)

THE CHAIRPERSON: Given the significance of having the array of talent that we have in front of us -- and I mean that in a most sincere fashion -- I think what we're going to do is we're going to take our break right now for ten (10) minutes, our morning break, and we'll just confer ourselves with Mr. Peters.

Then we'll come back, ask Ms. Ramage if she wants to do any re-direct. And then we'll move on to Mr. Williams and his witness, it will give him a chance to get ready too.

So let's say we're back at ten o'clock. Thank you. That will give the Panel a little bit more certainty.

--- Upon recessing at 9:50 a.m.

--- Upon resuming at 10:08 a.m.

THE CHAIRPERSON: Okay. Welcome back everyone.

(BRIEF PAUSE)

THE CHAIRPERSON: We do have a few of the undertakings we'd like to review with the Panel, just to reduce the potential for having to ask them to come back.

I'll go through them with you, if you don't mind. If we have forgotten some filing, you can let us know.

The first one was a general question that I actually asked from here. I simply asked that a lot of methodologies are floating around that have been proposed and could be imagined, and I was wondering what the Corporation's review was as to the potential of selecting two (2) or more methodologies and providing weights and averaging them to get closer to, if you like, an answer that would be seen by all to be equitable and fair.

MS. PATTI RAMAGE: Mr. Chair, I was going to address that question on re-direct but if you'd like, Mr. Warden could answer it right now.

THE CHAIRPERSON: Sure.

MR. VINCE WARDEN: Yes, Mr. Chairman. This question I believe you posed on May the 10th. And we've been debating about the merits of -- or whether there is a methodology that could somehow incorporate deemed environmental costs or -- or externalities and, as you suggested, come up with some kind of a weighting.

We definitely would like to be as responsive as we can to that request. However, we are not -- not convinced there would be real value in -- in this methodology -- or attempting to do this.

First of all, it would be quite subjective in terms of what we would determine those or deem those externalities to be. We could take a stab at that of course and -- I believe there -- there are some things we could do in that regard.

There is a time commitment that would be required, we are concerned about that. And if there are -- if we are going to devote that time, we'd like to do it on something that would be of value.

I think throughout these proceedings we've talked a lot about marginal costs. And there may be some value in putting together a cost of service methodology based on marginal costs.

That would take, though, to do it properly we think could take six (6) to eight (8) months, not an insignificant commitment of time.

And one (1) of the priorities for us, as soon as we get out of these proceedings as far as the cost of service people are concerned is the diesel issue and we do have to immediately address the growing problem we're having with diesel and the escalating costs in diesel communities. So we wouldn't like to divert attention away from that.

In summary, we again would like to be responsive and if so directed by this Board, we will devote the time necessary to put together another methodology as directed.

THE CHAIRPERSON: I'm pleased by the fact that you took the question in the general sense that it was intended. The example I used was externalities in environment and you talked about marginal costs.

And the point that you're concerned about, one (1) of the concerns was is that you are disinclined to develop a COSS that could be viewed as being subjective, is that a fair statement?

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

THE CHAIRPERSON: Okay. Thank you, Mr. Warden, I appreciate that.

The other questions that we just want to run over with you is Undertaking 4, the question was to advise as to whether Manitoba Hydro's prepared to disclose a list of summer month sales, excepting the name of counter-parties, without breaching confidentiality.

This is outstanding and I'm sure you have to give due consideration to this. Just add to this -- we're prepared to receive this material in confidence, if that would assist the Corporation.

I don't know if you're prepared to answer this one right now, or not.

(BRIEF PAUSE)

THE CHAIRPERSON: Even in confidence, excepting the name of the counter-parties, by the way.

MR. HAROLD SURMINSKI: I didn't hear all of it, sorry, but we are working on -- it is a significant tasks to compile all of these because there's hundreds and maybe a thousand transactions.

But, they're -- we do have -- you know we will selectively eliminate information that we consider to be confidential. But, so you would get more information if you asked for it in confidence, so it's your choice.

THE CHAIRPERSON: I think we'll take that one (1) under advisement and we'll get back to Ms. Ramage. We'll think on that. Thank you very much.

MR. BYRON WILLIAMS: Mr. Chairman ---

THE CHAIRPERSON: We weren't imagining that we were going to require the Corporation to spend numerable hours in developing this. So that's one part the thing we're interested in.

The second one (1) is we're always trying to assure ourselves that we're asking relevant questions that go to the objective of the exercise. And we'll ponder this a bit more too.

MR. ROBERT MAYER: Can we clarify? I think we're -- are we talking about Undertaking number --

THE CHAIRPERSON: Four (4) --

MR. ROBERT MAYER: -- or at least not undertaking number -- the fourth -- undertaking number four (4) on the May 5th transcript?

THE CHAIRPERSON: I don't have the date I just have the undertaking here. Mr. Peters will check.

(BRIEF PAUSE)

THE CHAIRPERSON: Mr. Peters, page 465, check it, is this the -- is this number 4 being extracted from that comment?

(BRIEF PAUSE)

THE CHAIRPERSON: That's not it. Disregard that. In any case we'll take it under advisement and we'll get back to Ms. Ramage.

MR. BYRON WILLIAMS: Mr. Chairman, if I might, Bryon Williams here. Just in terms of the reception of certain material in confidence.

You know, we're not sure -- there are rules under the Rules of Procedure and we're not sure exactly -- I'll have to review the undertaking as well and we may have some comments on behalf of our clients about maximizing public disclosure to the degree possible.

THE CHAIRPERSON: That's fine, Mr. Williams. We're going to ponder it.

Now, I wanted to return to something Professor Miller was just talking about. The Undertaking Number 12 and we understanding that CAC/MSOS was involved in this, and if memory serves us right there was an oral response to this.

We didn't just look -- find it in the transcript but the question was, review the evidence provided by Jim Lazar on behalf of RCM/TREE and comment on whether the principles of elasticity hold when speaking of a rate increase in the magnitude of 127 percent.

Perhaps to help us out you could just, sort of, provide us again the oral response you gave at that time? Mr. Williams is suggesting you'll find it at page 983.

MR. ROBIN WIENS: I'm not sure that I can add anything more to what was said on page -- on page 983.

THE CHAIRPERSON: Could you just read it again?

(BRIEF PAUSE)

THE CHAIRPERSON: Some of us occasionally claim to have very good memories but there's a limit.

MR. ROBIN WIENS: I think we have it starting on page 983 and well, we begin on line 7 where I stated that:

> "The elasticity is supposed to be a large measure that may cover a multitude of different types of adaptation. And I was trying to get

into that by way hopefully of
addressing the concern 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 even up to 30
percent..."

And I'm referring to price changes there--

THE CHAIRPERSON: Yes, I recall now.

MR. ROBIN WIENS: "I wouldn't see that as
being unreasonable. Beyond that I
can't, on the basis of what I have to
analyse, 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."

THE CHAIRPERSON: Thank you, Mr. Wiens. Undertaking Number 13, we have Mr. Cormie here and we were wondering whether this one too we're not certain it's been filed completely.

13 was: confirm whether for the purposes

of effecting diversity sale contracts membership in either MISO or MAPP are necessary. If so, in which, if any, of those two (2) organizations is membership necessary.

We think it might have covered off in the thirty (30) page submission of the other day.

MS. PATTI RAMAGE: My notes, just before Mr. Cormie jumps in is it's contained in Manitoba Hydro number 20 which I believe --

THE CHAIRPERSON: Was that thirty (30) page document?

MS. PATTI RAMAGE: Yes.

THE CHAIRPERSON: Okay. So we have that one.

MS. PATTI RAMAGE: But it wouldn't hurt if you'd like --

THE CHAIRPERSON: Presumably, yes or no?

MR. DAVID CORMIE: The answer is membership is not necessary.

THE CHAIRPERSON: Thank you. Sometimes the verbal response is easier.

MR. DAVID CORMIE: Yes.

THE CHAIRPERSON: Undertaking Number 14, it's a very similar question. In fact, I should have tied them in because it will be the same, yes or no. In terms of allowing for emergency purchases to compensate for failure of Manitoba Hydro's northern transmission connecting northern generation, and let's hope that does not occur, is membership required for either MISO or MAPP?

MR. DAVID CORMIE: Membership is required in MAPP. We are a member of the MAPP generation reserve sharing pool and as a member we are entitled to purchase emergency power under those circumstances.

THE CHAIRPERSON: Is there a penalty to purchase at that -- in such circumstances?

MR. DAVID CORMIE: We're entitled to purchase at the cost of generating electricity plus 10 percent. So we pay -- we pay a cost-based rate for that purchased power. There's no penalty.

THE CHAIRPERSON: Thank you.

(BRIEF PAUSE)

THE CHAIRPERSON: Is the membership fees for MISO and MAPP significant? Material for a Corporation the size of Manitoba Hydro just for simplicity sake --

MR. DAVID CORMIE: The MISO membership fees are in the order of $5 million.

THE CHAIRPERSON: So they're material. And MAPP? That's an annual fee you're talking about, Mr. Cormie?

MR. DAVID CORMIE: Yes, those are annual fees. And the MAPP membership fee is significantly less than that.

THE CHAIRPERSON: MISO provides a range of services, obviously for that level of funds?

MR. DAVID CORMIE: In exchange for the membership fee we are allowed to take network service at no costs. So we can use -- we can buy energy out of the market without having to take transmission service.

So the membership fee is designed to allocate the cost of running the MISO to native load and then every member of MISO picks up their fair share of those costs through the -- through the membership fee.

THE CHAIRPERSON: And just reminding myself and the others, this particular arrangement has facilitated this new undertaking that you've been involved in since May of 2005, has it not? The one in which you're displacing your own generation deliveries with purchases in the States so that you can sell across to Ontario?

MR. DAVID CORMIE: Yes, the MISO is not operating an energy market allows us to buy and sell electricity and from the market, rather than having to do it from suppliers directly.

THE CHAIRPERSON: Then we did understand that. Okay. Number 18 was a fairly simple question, we thought. We're wondering whether or not, Does Hydro Quebec or BC Hydro ensure their large assets or do they self-insure in the same manner as Manitoba Hydro?

MR. VINCE WARDEN: Mr. Chairman, the answer isn't quite as simple as I had originally --

THE CHAIRPERSON: Nothing is simple in this.

MR. VINCE WARDEN: No -- both Hydro Quebec and BC Hydro do have limits on their insurance and different deductibilities than does Manitoba Hydro. We're attempting to put together a schedule comparing ourselves to Hydro Quebec and BC Hydro. They haven't agreed to divulge that information yet.

So we're still in contact with those utilities but hopefully -- well --

THE CHAIRPERSON: The background -- the background context of all this just goes basically to management judgments with respect to when you start comparing -- you compared in some of your earlier remarks your debt equity ratio with that of Hydro Quebec and BC Hydro.

Presumably insurance or lack thereof, or self- insurance is a potential risk factor I imagine, goes into the equation somewhere?

MR. VINCE WARDEN: Yes, yes, it does. And --

THE CHAIRPERSON: If you had less insurance, for example, than them, it would argue for you having a higher equity component would it not?

MR. VINCE WARDEN: Yes it would appear the opposite is true though. We don't have less insurance than they do for certain perils.

THE CHAIRPERSON: That's our understanding, the other side of it is, normally when you looked at it, if you had less insurance you'd assume you'd require more equity, is that not true?

MR. VINCE WARDEN: Agreed, yes.

THE CHAIRPERSON: Thank you very much Panel. I think these are -- this runs through out list. Ms. Ramage?

MR. DAVID CORMIE: Mr. Chairman -- Mr. Chairman, I can tell you that our membership fees in those two (2) organizations last year were $5 million, 4.6 million were for MISO and 500,000 for MAPP membership.

THE CHAIRPERSON: US or Canadian dollars?

MR. DAVID CORMIE: Those are in -- those are in Canadian dollars.

THE CHAIRPERSON: Thank you. Ms. Ramage do you have any redirect for the Panel?

MS. PATTI RAMAGE: Yes, just a brief redirect.

RE-DIRECT-EXAMINATION BY MS. PATTI RAMAGE:

MS. PATTI RAMAGE: Mr. Cormie, yesterday counsel for MIPUG walked you through an Exhibit and I believe it was MIPUG Exhibit 7 and there's no need to refer to it, but it dealt with the cost of Conawapa, in particular, the comparison of five (5) units versus ten (10) units. Do you recall that discussion?

MR. DAVID CORMIE: Yes.

MS. PATTI RAMAGE: And there seemed to be a suggestion that expansion from five (5) units to ten (10) units is being considered only because of the possibility that it will facilitate opportunity sales, do you agree with that contention?

MR. DAVID CORMIE: No I don't. A new plant like Conawapa has a life expectancy well in excess of a hundred (100) years. And for most of that life its output will be entirely used to serve Manitoba load.

Therefore, it is designed in size to

optimize the site, given that long term need to serve the domestic customer.

MS. PATTI RAMAGE: What reasons support incurring costs for the ten (10) units in -- at any time?

MR. DAVID CORMIE: The factors that we consider in sizing the plant are our need for capacity, our need for dependable energy, the economics of the development including avoided costs from alternative supply such as imports and natural gas generation.

We want to maximize the value of energy generated. A smaller plant produces more off peak energy. A larger plant produces on peak energy. There's a differential value between on and off peak and we want to capture that to the extent that it's economic. And, in addition, there are environmental benefits from building a hydro plant that aren't available from thermal based generation.

MS. PATTI RAMAGE: One of the benefits you mentioned was capacity; can you expand on that?

MR. DAVID CORMIE: We have to ensure that at the time of peak load that there is sufficient capacity available in the system, including our need for reserves, and so that is one of the -- one of the design considerations when we expand the system.

Additional units are the lowest cost

alternative to providing capacity and are certainly lower than entering into firm power purchases or building more thermal plants.

MS. PATTI RAMAGE: So, to put it in terms that maybe I can understand, rather than spilling water in non-peak times your recommendation would be to add units, store water, and then run it through the turbines during peak periods?

MR. DAVID CORMIE: Yes.

MS. PATTI RAMAGE: And that would be as opposed to buying firm power at peak times or building peaking generation such as gas turbines?

MR. DAVID CORMIE: Correct.

MR. ROBERT MAYER: Arising out of that, if I recall reading somewhere that you're -- with construction of Conawapa the total flood area would be in the area of five (5) square kilometres and that would all be within the river bank. I'm wondering how much reserve capacity, how much ability you have to use what appears to be a relatively small reservoir for a relatively large generating station?

This just doesn't sound like -- I mean, I've seen the Nelson River. It's a pretty good size river but if alls you're doing is backing it up within the banks I'm wondering about your reserve capacity in that reservoir?

MR. DAVID CORMIE: The regulation for the river, Mr. Mayer, is provided at the upstream station at -- at Kettle. And so we can have a small forby (phonetic) but we really have a big forby immediately upstream and those stations run as a single unit although they are -- they are -- you know, they're in series. They all go up and down in - in -- in synchronous.

MR. ROBERT MAYER: But you have -- you have limits on that reservoir which I think is called Stephenson Lake?

MR. DAVID CORMIE: Yes.

MR. ROBERT MAYER: The forby in front of Kettle and that can only go back up to, if I recall your plants correctly, to the base of Kiask, if and when Kiask gets developed.

But you're not going to start backing that up to the point that it's going to get into Split Lakes I suspect?

MR. DAVID CORMIE: No, we won't be backing it up. And further that, we have Lake Winnipeg upstream that provides even greater regulation. And so the combination of Lake Winnipeg and Stephenson Lake provides effective regulation for the water that reaches Conawapa.

MR. ROBERT MAYER: Thank you.

CONTINUED BY MS. PATTI RAMAGE:

MS. PATTI RAMAGE: Mr. Cormie, what is the effect on the economics of new hydro generation when you have access to an opportunity export market?

MR. DAVID CORMIE: Market access allows Hydro to sell the surplus power when not needed to serve firm loads and generate additional revenues there -- thereby reducing the overall cost of the new generation.

MS. PATTI RAMAGE: Now, at page 396 of the transcripts Mr. Peters asked Mr. Surminski, and I'm quoting here:

> "If you were just going to have that facility serve nothing but domestic load it might influence you to put in a certain number of turbines. But if you had an opportunity to export that energy you might put in a few more?"

And Mr. Surminski responded:

> "No. It is more related to the incremental cost of adding the additional turbine and utilizing the water at the site."

He went on to say that it really has

nothing to do with the export market it just has to do with the optimal utilization of water at the site.

Now, do you agree with Mr. Surminski's response?

MR. DAVID CORMIE: Yes, I do. Again, Mr. Surminski is thinking about the long run need for capacity and energy; that need will be there for hundreds of years.

And because in the long run Manitoba load will grow and the entire output of the plant, both its capacity and energy, will be needed to serve Manitoba load.

Surpluses from new hydro occur only in the early years of the plant as a result of the large increments of capacity and energy to come along as a result of building large hydro plants.

MS. PATTI RAMAGE: Thank you, Mr. Cormie. That concludes Manitoba Hydro's re-direct.

THE CHAIRPERSON: Thank you, Ms. Ramage. And thanks again to the Panel from the Board and all present. We greatly appreciate your attendance and your answers, and we will discharge you. Thank you.

(PANEL STANDS DOWN)

THE CHAIRPERSON: Next up is Mr. Harper and CAC/MSOS, his witness. I'll turn the matter over to Mr. Williams, maybe, if you wouldn't mind, you could introduce Mr. Harper again. I think most people here are quite familiar with him but if you wouldn't mind briefly reviewing his credentials.

MR. BYRON WILLIAMS: Well, I'm going to -- before I do that, Mr. Chairman, I'm going to ask Mr. Barron to assist us by having Mr. Harper sworn.

And while he's on his way over to -- to do that task, I did want to introduce -- we've got the benefit of a summer student this year, he's -- he's recently finished his first year of law at the University of Manitoba, by the name of Daniel Penlin (phonetic), who's back in the -- the audience and who's -- you may see more frequently on some other matters relating to disconnections in the -- in the future. So I'm pleased that he's here, assisting us.

And we'll have him -- Mr. Harper sworn at any time.

WILLIAM HARPER, Sworn

MR. ROBERT MAYER: Are you happy with your location?

(BRIEF PAUSE)

EXAMINATION-IN-CHIEF BY MR. BYRON WILLIAMS:

MR. BYRON WILLIAMS: I am reluctant to have my witness sit too close to Manitoba Hydro but I thank the Board for their kind suggestion. And Mr. Surminski, I believe, has also volunteered to serve as Mr. Harper's back row.

Mr. Harper, you've appeared before this Panel and you've been qualified as an expert before this Panel on previous occasions on hydro matters, but I'd ask if you would very briefly outline your qualifications as you believe they pertain to the issues in this proceeding.

MR. WILLIAM HARPER: Sorry. I apologize.

In terms of my background, I've spent over twenty-five (25) years working in the electricity sector, primarily with Ontario Hydro and then with its successor company Hydro One Networks, and more recently as a consultant with Ecoanalysis Consulting Services, or ECS for short.

During my first five (5) years with Ontario Hydro I worked specifically on cost of service studies. I subsequently moved to -- to the rates department where I was eventually manager for seven (7) years, responsible for regulating Ontario's municipal electric utilities and also designing the rates that Ontario Hydro itself charged.

During my last five (5) years with Ontario Hydro and Hydro One Networks I worked in the regulatory affairs area where I was responsible for coordinating the company's participation in various regulatory proceedings.

During the course of my time with Ontario Hydro and Hydro One I've testified a number of times before the Ontario Energy Board on rates and cost allocation and regulatory matters.

Since leaving Hydro and joining and joining ECS in 2000, I've assisted and advised clients participating in regulatory proceedings dealing with electricity in BC, here in Manitoba, Ontario and Quebec. In this regard, I've served as an expert witness before the Ontario Energy Board, before the Regie de l'energie in Quebec, and -- and here before the Public Utilities Board in Manitoba on rates and cost allocation.

In addition to these proceedings, I am currently a member of a technical panel that the OEB has established to try and set up and develop a cost of service study that would be applicable to the eighty-five (85) plus distributors in Ontario. They don't have a common methodology right now and they're trying to work towards establishing one (1).

And I'm also involved with a technical working group that's been established by Hydro Quebec at the direction of the Regie to try and come up with a cost of service allocation methodology for their post-heritage supply, which -- which they're now starting to purchase in increasing quantities.

MR. BYRON WILLIAMS: Mr. Chairman, based upon the qualifications presented by Mr. Harper as set out in his oral testimony as well as his Curriculum Vitae, I'd ask that he be qualified as an expert witness regarding rate setting for electrical utilities with particular reference to cost of service methodology and rate design.

THE CHAIRPERSON: Ms. Ramage or any other Intervenors, does anyone have a problem with this?

MS. PATTI RAMAGE: Manitoba Hydro has no objection.

MS. TAMARA MCCAFFREY: MIPUG has no objection.

MR. DOUG BUHR: The City has no objection.

MR. JURGEN FELDSCHMID: CCEP has no objection.

THE CHAIRPERSON: Well, Mr. Harper, we're being -- Sorry, Professor Miller...?

DR. PETER MILLER: I don't object either.

THE CHAIRPERSON: We have unanimity. Welcome again, Mr. Harper.

MR. WILLIAM HARPER: Thank you very much.

MR. BYRON WILLIAMS: Thank you.

CONTINUED BY MR. BYRON WILLIAMS:

MR. BYRON WILLIAMS: Mr. Harper, I wonder if you can confirm that the evidence filed with the Board as Exhibit CAC/MSOS 1 and cost of service methodology review was prepared by you?

MR. WILLIAM HARPER: Yes, it was.

MR. BYRON WILLIAMS: Similarly, can you confirm that the Interrogatory responses filed on June 7th in response to questions, I think June 7th is the wrong date, but in response to questions from PUB staff, Manitoba Hydro and MIPUG regarding the evidence was prepared by you?

MR. WILLIAM HARPER: Yes, they were.

MR. BYRON WILLIAMS: Mr. Harper, are there any changes or corrections you would have liked to make either to -- to the evidence or the Interrogatory responses at this time?

MR. WILLIAM HARPER: Well, there are a few typographical errors that are self-evident. But there are just a couple I'd like to bring up for the Board's attention and those are with respect to the footnotes that are found on -- footnote 5 and footnote 6 which are found on pages 3 and 4 respectively.

Each of those footnotes refer to a Interrogatory and I should have noted that the Interrogatory was from the 2004 GRA as opposed to this proceeding. If you try and find that Interrogatory in this proceeding it won't make any sense. So both of those Interrogatory responses are with respect to the 2004 GRA.

Also there are a few places where my thinking has evolved since -- since I wrote the evidence. Particularly in listening to the various, you know, testimony that's been taking place here and I'll be speaking to those shortly. But other than that the evidence and responses are accurate to the best of my knowledge.

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

I wonder if you can outline for the Board the purpose of your evidence as filed with the Board in this proceeding?

MR. WILLIAM HARPER: Okay. ECS, and specifically myself, was asked by CAC/MSOS to review Manitoba Hydro's proposals with respect to its cost of service methodology and prepare evidence that would assist both CAC/MSOS and other stakeholders in the proceeding an understanding the reasons for and the appropriateness of Manitoba Hydro's proposals with respect to it's new -- it's proposed new cost of service methodology.

MR. BYRON WILLIAMS: In your view, Mr. Harper, what do you see as the key issues in this proceeding?

MR. WILLIAM HARPER: In simple terms, Manitoba Hydro has put forward a new cost of service methodology and is seeking approval from the PUB to use either it or some revised form of the methodology as a -- as eventually approved by the PUB in developing future rate proposals it will bring forward before the Board.

In terms of the actual changes put forward they really focus on two (2) areas. The first, and probably the most significant one, is the treatment of export revenues which has led to the creation of two (2) export classes, the splitting of transmission between domestic and export lines, a change in the cost of -- or how costs are attributed to exports and, finally, a change in the allocation of the net export revenues themselves.

This -- the second change is with respect to the allocation of generation costs where a new methodology which uses marginal cost weighted energy use by time period to allocate the cost of customers classes is being proposed.

And these are the matters that my evidence dealt with specifically.

MR. BYRON WILLIAMS: Now, Mr. Harper, you've outlined what you consider to be the two (2) key issues, one, being the treatment of export revenues and, secondly, the allocation of generation costs.

Before moving to those areas specifically I wonder if you can indicate in your view if there are any other issues that have surfaced over the course of the proceeding that you may wish to comment on?

MR. WILLIAM HARPER: Yes. In terms of the COS methodology additional questions -- I think eventually you get into a hearing like this and obviously other questions arise and with respect to the methodology itself I think questions have arisen as to what's the purpose of a COSS methodology; what costs should be included in the cost of service methodology.

There were some discussions about that just before I started here. Should it be embedded costs; avoided costs? Should externalities be included? How should the results of the COS be used with reference to the zones of reasonableness?

And then beyond the COS issues themselves, the proceeding has also touched on issues of rate design and on revenue requirement determination. And I don't find that particularly surprising given that, sort of, revenue requirement determination, cost of service, and rate design are really the three (3) building blocks you use eventually to come up with a rate.

So it's hard to talk about one (1) piece of the puzzle without dealing with the other two (2).

And finally interesting and it's always a pleasure to come to Manitoba because things get beyond the technical sometimes. The proceeding has also touched on broader issues, such as Manitoba Hydro's role and objectives with respect to environmental leadership, its potential as a source of revenue for the shareholder and its impact on industrial development.

All of these issues are relevant and indeed highlight the fact that ratemaking in Manitoba or indeed anywhere else doesn't take place in a vacuum but, rather has fundamental implications which must be understood before critical decisions in the ratemaking process are made.

However, in my view some of these issues are perhaps best left to another PUB proceeding, while others I think the debate's probably going to have to take place without other stakeholders and other people even in a forum beyond the PUB itself.

MR. BYRON WILLIAMS: Mr. Harper, in outlining some of the issues that have come up in the course of this proceeding, you talked about one (1) question which is, what is the purpose of a cost of service study?

And I wonder if you could provide your views on the purposes or objectives that we should keep in mind in performing such a study.

MR. WILLIAM HARPER: Well, it's important to note and I think I just mentioned that the cost of service study or COSS is one (1) of the three (3) steps in utilities overall ratemaking process.

And as you, Mr. Williams, discussion with Mr. Wiens a couple of weeks ago, it's generally accepted that there are three (3) primary objectives we're trying to achieve in setting rates.

Namely, recover the revenue requirement established for the utility. Distribute that revenue requirement fairly amongst the various customers. And promote the efficient use of electricity with consideration to the costs and benefits.

In my view, the primary purpose of a cost of service study is to provide guidance with respect to the fairness objective or the second one that I just mentioned. It is generally accepted that fairness in rate setting is achieved when there's an equal treatment of equals based on cost causation, that is consumers rates are based on the costs incurred to serve them.

So effectively what a cost of service study does it is analyzes the components of a utility's revenue requirement, attempts to identify the key cost drivers as associated with each component and then allocates or directly assigns the costs amongst the various customer classes.

The results of this analysis can provide guidance to the utility and to the regulator regarding the fair apportionment of total costs amongst the various customer classes.

The other thing it can do and you'll notice from Manitoba Hydro's cost of service study, is not only total costs or RCC's, it also comes up with unit costs. Unit costs per kilowatt hour, unit cost per customer.

And those unit costs can provide guidance at the rate design stage, in terms of how we design the rates and therefore how we apportion costs between customer within a class.

MR. BYRON WILLIAMS: That all sounds pretty straightfoward Mr. Harper. Why does cost of service methodology turn out to be so controversial?

MR. WILLIAM HARPER: It's complicated for a couple of key factors. First, I think it's been a discussion around the room here for the last few weeks, a large portion of utilities assets are joint or shared assets that support the provision of more than one (1) service and support the provision of service to more than one (1) customer class.

As a result, determining how to share these joint costs frequently requires judgment and since the decisions in terms of how those costs have been incurred typically can go back, as Mr. Cormie said, if the stations can last a hundred (100) years, some of the decisions were made a long time ago and trying to understand cost causality can sometimes be difficult.

Second, the determination of cost causality is not a simple matter of who uses the asset, but who causes the need for the asset and therefore who caused the need for those costs to be incurred?

Not all customers using an asset are equally responsible for the costs that have been incurred. Differences in time of use, reliability, impact on the utilities planning processes, all have implications in terms of cost causation.

I think the simple conclusion to this is all kilowatts and kilowatt hours are not created equal.

MR. BYRON WILLIAMS: Thank you Mr. Harper. There's been a lot of discussion in this proceeding and prompted to a large extent by Mr. Lazar's evidence regarding the costs that should be used in a COSS study.

Could you give us your views on whether marginal costs and or the cost of externalities should be included in a cost study?

MR. WILLIAM HARPER: Yes, as I mentioned earlier the key objective in performing the cost of service study is to indicate what would be a fair apportionment of the utility's revenue requirement amongst its various customer classes.

Given this objective, it is my view that the appropriate costs to be allocating are the costs that make up that revenue requirement. In Manitoba Hydro's case these are the embedded or accounting costs for the test year in question.

It is these costs that the utility should be analyzing in terms of cost causation and allocating to customers. As a result, I don't consider it appropriate to include either marginal costs or externality costs in a cost of service study.

MR. BYRON WILLIAMS: Are you saying that a utility's marginal cost and externalities do not have a role in ratemaking?

MR. WILLIAM HARPER: No. Sometimes marginal costs can provide useful insight into how embedded costs should be allocated to customer classes. An example of this being the proposal Manitoba Hydro has to use marginal cost weighted energy to help allocate generation costs to -- to -- to the customer classes.

Indeed, the capital substitution method that the NERA -- the NERA study identified is being used by a lot of utilities for classifying costs between demand and energy, effectively uses the marginal cost of capacity in order to help determine what are capacity costs. So I think it has a role in helping to, as I say, get into how we are going to split some of those joint costs.

However, beyond this, marginal costs are a key and important consideration in the rate design phase which is really the last phase in the rate setting process. You'll recall that besides fairness one of the other key objectives in setting rates was -- was efficiency.

Comparing rates, and in particular rates for incremental use to marginal costs, provides a measure of the extent to which rates will encourage efficient use and meet -- and meet this efficiency objective.

It's interesting to note that sometimes tensions can arise at the rate design phase when the unit costs from the cost of service study differ dramatically from what would be the marginal costs that you calculate and that makes one of the aspects of rate design particularly interesting and challenging.

MR. BYRON WILLIAMS: I've rarely heard rate design described as interesting and challenging, Mr. Harper, but we're all entitled to our opinions.

Apart from this tension when there's a conflict between -- or a significant difference between marginal costs and unit costs based on embedded costs; are there other issues associated with the use of marginal costs in the COSS or cost of service study?

MR. WILLIAM HARPER: Yes. Applying marginal costs in the cost of service study does introduce some -- does introduce some practical problems. First, there's debate over whether short run or long run marginal costs should be used.

If we recall from the earlier testimony, and I won't take you through garage analogies any more, by the Hydro panel short run marginal costs can be viewed as the cost or savings resulting from responding to a temporary change in demand given your existing facilities.

In contrast, long run marginal costs really look at a longer term perspective and consider what are the cost or savings in meeting, say, a permanent change over a period of time when you can actually adjust your capital investment.

From a purely theoretical point of view, economists would argue that short run marginal costs send the appropriate price signal and they're the ones you should be using in doing cost of service studies or, indeed, setting rates.

However, short run marginal costs can prove to be highly unstable such that the results would vary widely from year to year. As a result, others would argue that long run marginal costs be used for stability reasons and to encourage appropriate long run investments.

Indeed, this was one of the contested issues before the BCUC in the design of the industrial step rates referenced in the Intergroup evidence. BC Hydro initially proposed using a price based on short term opportunity cost to set the price for its second incremental block but the BCUC decided in the end that the stepped rates should be based on the cost of long-term supply in the interests of sending the right long-term price signal and maintaining some stability in the rates.

Apart from definition, there are frequently debates about the method -- what methodology should be used to determine these costs and I can see a similar problem arising here.

As I understand it the methodology Manitoba Hydro uses to determine the five point three five (5.35) cents per kilowatt hour marginal cost for generation is based on export price forecasts that Manitoba Hydro still continues to be commercially sensitive.

And as a result disclosure of the current methodology could prove to be problematic if one wanted to, sort of -- we'd be back almost in the same position we were at the 2002 status update in terms of trying to use the methodology and then having to come up with another proxy because of problems about confidentiality of the -- of the information underlying the starting methodology.

For purposes of allocating generation costs Manitoba Hydro proposes to use its SEP rates as a proxy. However, the results are being employed simply to derive the relative values by time of use period whether their SEP prices are also a good proxy for short run or long run marginal costs, whichever of the two (2) one was to decide to use, is something that would have to be considered if you were going to go forward and do a marginal cost based cost of service study.

Finally, as I said before, marginal costs and embedded costs, and it's only by luck that the two (2) of them would actually end up giving you the same amount of revenues overall. So there are various approaches that can be used to reconcile a marginal cost based cost of service study with the actual revenue requirement that's been approved by the regulator.

A proportional adjustment is often seen as one of the easiest way to do. However, economists will argue that more complicated adjustments that consider the relative price elasticities of each customer class will produce more efficient results.

And, again, debates can arise in terms of which methodology for adjusting and closing on a revenue requirement is -- is the -- is the appropriate one to use.

Now, all of those -- all of those practical problems are ones that can be addressed but -- but they require time and consideration. So I guess I'm just saying that the adoption of marginal costs is not -- is not an easy thing, just like cost of service itself is -- is not an easy thing to do sometimes.

MR. BYRON WILLIAMS: Well, you've persuaded me now, Mr. Harper, that -- that it is an interesting subject. Perhaps you can move on to the cost of externalities.

MR. WILLIAM HARPER: First, it's important to note that through its application of full cost accounting, in decisions with respect to operations, procurement and resource planning, and through the expensing of mitigation payments, the cost of externalities have -- have already been reflected to some extent in Manitoba Hydro's revenue requirement.

Beyond this, one could consider including the cost of externalities along with the Utility's marginal costs when calculating the benchmark to use, whether or not -- in assessing whether or not a utility's proposed rate design satisfies the efficiency objective I talked about before.

More or less, as well as comparing

incremental rates with marginal costs, you can -- you can compare the -- rates for incremental consumption with marginal costs plus externalities if you wanted to. However, I have some reservations about this.

First, we have not captured nor are we likely to capture the costs and benefits of all externalities associated with electricity supply. And second, the purpose of efficient pricing is to signal to customers the cost consequences of the consumption choices they make.

To the extent that other products do not similarly include the cost of externalities, reflecting such costs in Ontario -- excuse me, in Manitoba Hydro's rates -- too many years with Ontario Hydro, I guess -- in Manitoba Hydro's rates could well lead to inefficient decisions since there would be externalities in the prices they see for Manitoba Hydro but not externalities in the prices they're seeing for the other choices that they may have to make, whether it be gas heating, gas water heating versus electric water heating, or a host of other choices they'll have to make with -- with respect to use of electricity.

Overall, it is my view that externality costs should not be combined with marginal costs of a Utility for purposes of determining whether the incremental prices produced for a particular rate design will -- will contribute to efficient use.

However, saying this, regulators are frequently charged with taking into account broader issues than just those associated with rate design, including the overall public interest.

In this regard, regulators may consider information regarding externalities and the impacts of customer consumption decisions to be useful in their overall deliberations. Places where this could be used would be to determine whether or not there -- there was merit in -- there was additional merit in going ahead and adding to this whether or not we should introduce, say, stepped rates or incremental or inverted rates in Manitoba, and also decisions about how -- perhaps how fast we -- we should implement those rate changes.

MR. BYRON WILLIAMS: Just to finish up on some of these general topics, perhaps we can finish up our discussion regarding the general role and purpose of cost of service studies by asking for your views as to the role for establishing a zone of reasonableness, ZOR, Z-O-R, when considering the revenue to cost ratios calculated by a cost of service study.

MR. WILLIAM HARPER: There are a couple of reasons for adopting a zone of reasonableness when assessing the revenue to cost ratios and deciding whether, in the context of a particular GRA, different rate increases should be implemented for different customer classes.

The first point is the one that Mr. Peters and Mr. Thomas discussed a couple of weeks ago about the results of the cost of service study being approximate. However, even if one was to accept the results of the cost of service study as being 100 percent accurate, there are still reasons why one might not necessarily want to set rates in order to achieve 100 percent revenue to cost ratio every year.

As well as the three (3) primary rate setting objectives we discussed earlier, one of the other generally accepted objectives with respect to electricity rates is the criteria of rate stability.

As demonstrated by information that Manitoba Hydro prepared in its filing, even if you're using the same methodology, different data sets each year can actually change the revenue to cost ratios and they can vary from one year to the next.

So there's a concern that you would be having increases in one class for one year that were, say, slightly higher than average one year only to turn around the next year and have -- have decrease --

increases that were slightly less than average the next year because the revenue to cost ratios move around from year to year simply because you're using different data sets every year.

Now, these variations are probably in the order of maybe one (1) or two (2) or three (3) percentage points. So that -- so I guess what I'm saying is when you get within the zone of reasonableness that's established here, ninety-five one-o-five (95-105) and start to approach 100 percent, I think one -- one doesn't want to necessarily be married slavishly to having to follow that 100 percent every year if it's going to end up introducing rate stability overall -- excuse me, rate instability overall.

MR. BYRON WILLIAMS: Thank you for the overview of the general purpose of a cost of service study, Mr. Harper.

The two (2) key issues you identified, one (1) of them dealt with export revenues and let's start with why this is an issue in this proceeding.

MR. WILLIAM HARPER: First it's important to note that export revenues are not a cost that has been incurred with a view to providing service to domestic customers.

Rather they are a cost offset that arises as a result of Manitoba Hydro's participation in neighbouring electricity markets and sales contracts with neighbouring utilities.

However, they do form part of the revenue requirement and must be considered in the cost of service study if the allocated costs are to equal the approved revenue requirement used to set the rates.

Indeed, if they aren't included as an offset then the revenue requirement and any required rate increase will correspondingly be higher.

MR. BYRON WILLIAMS: As a cost offset, how are these export revenues treated in the cost of service study?

MR. WILLIAM HARPER: In the past and I guess that's if we go back and look at the late 1980's early 1990's, export revenues were making a small contribution to overall costs and were priced at less than domestic rates.

As a result, it was reasonable and to some extent expedient that they be allocated based on customer use of generation and transmission, the rationale being that these were the facilities and these functions that were used to create the exports and the revenue should go to offsetting their costs.

However, export prices have increased and export revenues have grown in magnitude to the point where there are a number of problems with this approach.

First, given that increased customer use can actually impair the ability to make more lucrative export sales it is now counter-intuitive to the principle of cost causation to continue to allocate net export revenues on the basis of generation and transmission usage.

It isn't the use of generation and transmission that allows net export revenues to be created, but rather the fact that customers aren't using it and there's surplus generation and transmission available.

This would suggest that the current allocation is inconsistent with the principle of fairness with respect to cost causality.

Second, allocating export revenues to just generation and transmission results in a significant difference between the actual cost of generation and transmission and the net cost eventually allocated to customers.

This leads to a significant distortion when it comes to using the results of the cost of service studies to generate rates that inform customers as to the cost their actions may cause the system to incur in the future, but also leaves, as evidence by Manitoba Hydro's earlier testimony, to rates for some customer classes being significantly less than marginal costs.

MR. BYRON WILLIAMS: So why is the gap between certain customer classes rates and marginal costs important?

MR. WILLIAM HARPER: These gaps really aren't, I'd say, a primary considerations for purpose of -- for purposes of establishing cost of service methodology, but they are relevant from a couple of perspectives.

First, they highlight the fact that, unlike in the early 1990's, decisions regarding the treatment of export revenues may have a much more significant impact on the cost of service results and therefore the treatment of export revenues warrants careful consideration, whereas in the past -- and typically what happens is, the smaller a cost is in the cost of service study the less attention it tends to get because there are bigger fish to fry, if I can put it that way, but I think this now ends at being one of the bigger fish in our frying plan.

Second, it highlights the problem that will subsequently arise in the rate design phase when considerations of fairness, efficiency and rate stability have to be combined in the determination of the actual rates that were charged customers.

MR. BYRON WILLIAMS: Mr. Harper, you'll recall from your review of the transcript that earlier in this proceeding, there was some discussion as to whether the critical driver behind the issues of export revenues is the increased level or revenues or the increase in export prices. What's your take on this issue?

MR. WILLIAM HARPER: In my view, the critical factor is the change in price. Indeed if you look at the export volumes the volume of sales in 2005 isn't much higher than it was ten (10) years ago. What's changed is the fact that the export price is doubled.

Price as opposed to volume is also the critical factor in terms of the overall paradigm Manitoba Hydro now faces where domestic sales increases at the expense of export sales, lead to -- used to lead to increased revenues, where not the opposite is true.

Increases in domestic sales actually lead to lower overall revenues.

MR. BYRON WILLIAMS: I'm going to forgive you the use of the word "paradigm," Mr. Harper. In terms of export revenues, though, I understand that you're generally supportive of Manitoba Hydro's proposals in this area.

We'll get into the details later, but at a high level could you explain why?

MR. WILLIAM HARPER: Yes. At a high level, Manitoba Hydro's proposals involve establishing two (2) export classes to distinguish between firm and opportunity sales and then assigning and allocating costs to these classes.

Any remaining excess net export revenue are then distributed back to the domestic classes based on total allocated costs, rather than just generation and transmission.

As I stated on page 51 of my evidence, Manitoba Hydro's proposal is a reasonable attempt to balance a couple of key considerations. First, by allocating a share of both variable and fixed costs exports the method provides explicit recognition of the fact that costs were incurred by Manitoba Hydro to secure export revenues and seeks to allocate them a reasonable share of such costs.

To this extent it recognizes directly the principle of cost causation associated with exports. However, at the same time, by allocating the excess revenue on a more neutral basis it attempts to ameliorate what I've terms to be perverse signal being sent by the current method that uses just generation and transmission assets to allocate net export revenues.

MR. BYRON WILLIAMS: Before we go any further and before the Vice-Chair points this out to you. As I recall from 2002, when the issue first arose, you expressed some concerns with the creation of a export class.

Could you explain what your concerns were at that point in time?

MR. WILLIAM HARPER: During the status update the concept of an export class was introduced and discussed and it's been discussed numerous times since then. At that time, I expressed concerns about the introduction of an export class.

In particular, if the purpose was at all related to determining the appropriate price for exports since export prices are determined by the market and not by cost of service studies.

Or my other concern was, if the purpose was in any way going to be related to determining, after the fact, that exports were making money, that is if past export related decisions had been appropriate in that the revenues exceeded costs.

The reason for this is that such assessments involve a different type of economic analysis, similar to what was done and used for an alternative to -- phase of the Wuskwatim hearing, where you're looking at the business case and the incremental costs and the incremental revenues as opposed to looking at revenues and allocated average costs.

So I had a significant concern about creating some results that might actually -- would end up being misused or misinterpreted.

With respect to the use in the cost of service study, I also indicated some concerns about the principle cost causality and whether it was reasonable to attribute that the same degree of cost causality to a kilowatt of exports, even firm exports, as it was to a kilowatt hour of domestic load.

Finally, in response to a question from the former Chair, I indicated that while the creation of an export class might be a middle of the road solution from a cost of service, sort of, cost allocation perspective, in terms of trying to find a balance in terms of how we're going to treat these export revenues, I was concerned about the sufficient availability of public information that would allow us to proceed and implement such a methodology.

MR. BYRON WILLIAMS: So those were your views in 2002, what, if anything, has changed since then?

MR. WILLIAM HARPER: I think since then

the Board in its decisions and actually the NERA report, as well, in terms of making its recommendations to Manitoba Hydro, has made it clear that the purpose of the export class was solely for cost allocation purposes, in terms of determining a fair allocation of cost to domestic customers.

It wasn't for setting prices and it wasn't for determining the economics of a particular export opportunities. And this is a point that I raised in my evidence, as well.

Next, while it was acknowledged during the status update that some of Manitoba Hydro's costs had been incurred in the past for purposes of exports, since then Manitoba Hydro has indicated that it plans to advance the construction of Wuskwatim and has introduced additional wind generation and advanced those need dates, in order to be able to take advantage of exports.

This change in my mind, gives more credence to the need to perhaps establish a sort of export class and try and more explicitly recognize the costs associated with exports so we can do a fair cost allocation.

MR. ROBERT MAYER: I'm sorry to interrupt. You talked about export classes in your Examination in-Chief. Now, you've said export class.

I'm interested in your view because I think your evidence supports the creation of two (2) export classes?

MR. WILLIAM HARPER: Right, I perhaps wasn't you know -- sometimes in speaking I forget to add the -- and I appreciate it's critical and thank you. No, I was talking about export class in a generic sense in terms of the export class and you're right in my evidence I specifically support the introduction of two (2) export classes.

I guess I was using it in a generic sense, but thank you for bringing it to my attention and clarifying the transcript.

CONTINUED BY MR. BYRON WILLIAMS:

MR. BYRON WILLIAMS: Just Mr. Harper, we talked about a couple of the reasons in terms of why the opinions you expressed in 2002 Hearing might have changed.

Are there any more that you wish to discuss? I think we had finished off --

MR. WILLIAM HARPER: Yeah. Yeah. No. No. Yes. I -- I think the issue we -- we seem to be a bit of a -- obviously, sort of, the allocation and treatment of export revenues is -- is a fore-issue and one of the concerns I think, as the Board itself has acknowledged, is sort of trying to make sure, before we deal with the excess and define, you know, that we sort of have a reasonable approximation of what -- what that excess is.

And if introducing an export class, albeit perhaps using some approximations, allows us to come to some middle ground so we can come up with a method that sort of -- will sort of address, as I said, both issues, recognizing there are some costs associated with exports beyond just the variable costs, and at the same time trying to address some of the issues about the allocation of the -- of the excess, then I think the export class is sort of, as I said, is perhaps a middle of the road way to go that would help resolve this issue.

MR. BYRON WILLIAMS: Let's go to the -- the Vice-Chair's question, that he just posed, adding an 'es'.

Manitoba Hydro's proposal includes the creation of two (2) export classes as opposed to just one class, as originally recommended by NERA.

What are your views as to whether there should be one (1) or two (2) export classes?

MR. WILLIAM HARPER: Well, I think I'd like to first start off by going back -- back to the opening sections of my evidence, where I stated that the purpose in creating different customer classes is to group together individual customers who have similar characteristics in terms of -- of their service requirements and, therefore, are expected to impose similar costs on the Utility.

So what you're doing is you're trying to group like customers and make sure that if you have two (2) customers classes there are unique and distinct differences between them in terms of the -- the way they impose costs on the Utility.

Apart from making the obvious distinctions, such as the types of assets they use, i.e., do they use distribution assets or not, which is one (1) reason why we have a general service large customer as opposed to a residential customer, general service large customers don't require any distribution assets, there are a couple of other key ways one can try and distinguish customers for this purpose.

One is with respect to how their loads impact on the planning of the Utility and the Utility's willingness to commit funds to support those loads.

The second and somewhat related, because now we're looking at it from the customer's perspective, is what -- what is the reliability of service that the customer is getting. And if there's a marked difference in the reliability of service that the customer is getting, then perhaps there is a need for two (2) as opposed to one (1) customer class.

In the case of exports, in my view, there are some fundamental differences between the firm exports, that is exports with contract terms of longer than one (1) year, and opportunity exports in both of these areas, that would support the creation of two (2) export classes.

MR. BYRON WILLIAMS: You mentioned the one key issue to look at is how their loads impact on the plan of the Utility. And I'm wondering if you can speak to how does the treatment of exports and resource planning support the creation of two (2) export classes.

MR. WILLIAM HARPER: Okay. We've heard a number of times during this proceeding that firm exports are backed by dependable energy, generation capacity commitments and the availability of firm transmission. For planning purposes they are treated the same as domestic load and the resources required to serve them are not considered available to meet domestic requirement should circumstances change.

In contrast, opportunity sales, even short-term firm commitments, are based on the availability of surplus energy over and above dependable resource. Also, the shorter time frame of less than one (1) year means that such commitments are based on existing capacity and do not impact on Manitoba Hydro's capacity planning process.

MR. BYRON WILLIAMS: You also mentioned the related issue from the customer perspective of reliability. And I wonder if you could explain how differences in reliability for firm and opportunity sales --

MR. WILLIAM HARPER: Right.

MR. BYRON WILLIAMS: -- support the creation of two (2) export classes.

MR. WILLIAM HARPER: From a day-to-day operations perspective, firm exports have a higher degree of reliability than opportunity exports indeed. Some -- some firm exports have had the equivalent of domestic load in terms of their overall reliability.

The implications are that firm exports are much closer to domestic load. And when I say "domestic load" I would exclude the -- the SEP customers and I exclude the curtailable rate customers because they -- because they are special domestic customer classes.

So they're much closer to those -- to domestic load than opportunity exports in terms of the obligations the load places on the system from an -- for operating purposes and the level of reliability that the customers receive.

Overall, these two (2) factors suggest that a different treatment is warranted in the cost of service study for firm versus opportunity sales.

Also, in terms of cost causation, while Manitoba Hydro has maintained that the incremental costs incurred to support firm exports are less than those incurred to support domestic load, it is also clear that the additional costs incurred to facilitate opportunity sales are substantially less than the cost of the basic infrastructure required to support firm sales.

MR. BYRON WILLIAMS: Let's turn to the allocation of costs to the export class. Can you understand -- or outline your understanding of how that is done?

MR. WILLIAM HARPER: It is probably easiest to start with the current method and then look at what has changed with respect to Manitoba Hydro's recommended approach. Under the current method Manitoba Hydro only assigns to exports the variable costs that can be directly linked to export sales.

This includes all purchases, 50 percent of Brandon fuel and related costs, the water rentals based on a portion of the exports made from hydro generation, external transmission service charges, and the costs the Chair was talking about earlier with respect to the fees involved in belonging to the MISO and MAPP organizations.

Under the recommended method Manitoba Hydro has estimated, based on a range of possible water flows, that roughly 55 percent of total exports will be firm sales and the remaining 45 will be opportunity sales.

Using this information Manitoba Hydro has attributed 45 percent of the directly assigned costs that I talked about under the current method to opportunity sales and the remaining 55 percent to firm sales.

In the case of the opportunity exports these are the only costs attributed to the class. So they basically are tracking the same types of costs as what were done under the current method.

However, in the case of firm exports this 55 percent is combined with the remaining generation and transmission costs and allocated between firm exports and domestic customers based on a common allocation methodology that treats both types of customers the same.

For generation costs, including this residual I just talked about, costs are allocated using the marginal weighted energies by time period. For transmission costs the initial proposal called for a separation of interconnection facilities and domestic facilities. For the former, that's the interconnection facilities, would be allocated to customer classes based on energy use, and the latter; that is the domestic facilities, would be allocated based on a two (2) CP or two (2) coincidence factor method which is the same method currently used for transmission costs.

However, in its rebuttal evidence Manitoba Hydro is now recommending that there be no separation and that all transmission costs be allocated to customer classes including firm exports based on this two (2) CP method.

MR. BYRON WILLIAMS: Now, Mr. Harper, I noticed you didn't use the word "interesting and challenging" for this subject -- this section of your evidence but it is important so I'd like to get your views on each of these components and perhaps we can start with the directly assigned costs.

And as I reread your evidence this weekend it appeared to me that you were somehow -- or somewhat uncertain in terms of how these costs should be treated. Could you explain why and if -- if it's possible, could you be a little bit more definitive this time?

MR. WILLIAM HARPER: Yes. And in rereading my evidence I can appreciate that it sounds somewhat like the stereotype economist, on the one hand A, and on the other hand B and I apologize for that. It was due, in some part, to what I saw some inconsistencies in terms of how Manitoba Hydro was approaching the question and some uncertainty on my own part as to exactly how some of the cost components were actually being treated under the current method.

For a number of the cost elements that are directly assigned, the question of whether they are incurred to support opportunity exports, firm exports, or domestic sales depends on system conditions and, in particular, water flows.

The prospective cost of service study presented in this proceeding and, indeed, the ones that are typically used in all GRAs are based on median water conditions. Under these conditions available hydro generation is sufficient to meet both domestic loads and firm exports.

This would suggest that purchases and thermal fuel costs, with the exception perhaps of firm purchases, are associated with opportunity sales. However, and this is where the problem arises, under alternate flow conditions, and I think we've heard testimony to this already, in particular under low water flow conditions, both purchases and thermal generation can be utilized to support firm exports and can even be used to support domestic load.

So actually, and this is something that's rather unique to me in terms of my experience in cost of service in terms of the cost causality of the costs depending on changing with the system conditions and water flows. It's something that I haven't seen in other utilities I have dealt with.

Therefore the appropriate cost of service treatment for these costs depends on whether one is performing the cost of service study in order to reflect cost causality under median water flows or under a wider range of system conditions.

The problem I had with it, it wasn't clear from Manitoba Hydro's filing which of those two approaches they were using.

For example, in the case of purchases, which are initially allocated 100 percent to exports, there was no -- there was no explicit recognition of the key role that purchases play in serving domestic loads during droughts; and therefore, the treatment appeared to reflect system conditions during median water flow conditions.

However, in the case of Brandon initial assignment of 50 percent of the fuel cost to domestic customers did appear to recognize the role that Brandon plays during droughts to -- to support domestic load.

During the course of the proceeding I -- I believe Manitoba Hydro has suggested that the cost of service study should represent the cost drivers for purchases and thermal costs over a range of system conditions. I concur with this approach.

But somewhat more complicated. Obviously the easiest thing to do is to pick one set of system conditions and see how all the costs would fall under that. Trying to consider a range of system conditions is probably more complicated but it does actually reflect all the reasons why these various costs are being incurred by Manitoba Hydro.

MR. BYRON WILLIAMS: So if we look analytically at this issue, Mr. Harper, it seems that you're recommending a principle that the cost of service study should represent the cost drivers for purchases and thermal fuel costs over a range of system conditions.

In your view does Manitoba Hydro's recommended method represent a consistent application of this principle?

MR. WILLIAM HARPER: Not entirely. In the case of Brandon and Selkirk, I would say yes. As I understand it Brandon, and specifically the coal units, are likely to be operated to support opportunity sales during median and high water flow periods subject to inter-tie limitations.

Whereas during low water flow periods the units, including even the gas units, could be used to support domestic sales. Under such conditions the units might also be used to support firm exports as well.

The actual usage, as we've heard, would depend on the availability and the economics of purchase power. If it's more economic to purchase power to meet firm export requirements or domestic requirements then that's clearly the proper decision to do as opposed to operate those thermal units.

Alternatively, there could be circumstances where the purchases are more expensive than operating the thermal units and therefore the thermal units at Brandon would be used to support domestic load and firm exports.

This dual role is reflected in the fact that the Brandon fuel costs are initially split 50/50 between domestic loads and exports. In the case of Selkirk, given that it's gas-fired and it's used to support opportunity exports, it's much less likely, while it does support firm load during low water flows, it's 100 percent assignment to domestic loads appears to also be consistent with its use during a range of system conditions.

In contrast to this, in the case of purchase power from neighbouring jurisdictions, the initial 100 percent assignment to exports is inconsistent with the cost of service treatment that would reflect a range of system conditions as it does not reflect directly the support purchases provide to domestic load during low water flow periods.

Based on Manitoba Hydro's own analyses as presented in its rebuttal evidence and recognizing that imports during drought do not include purchases to support firm exports, and there was discussion by Mr. Williams earlier on this, it will be reasonable to conclude that roughly 50 percent of purchase power volumes should be initially assigned to domestic load and for simplicity purposes I would translate those volumes into costs and say 50 percent of purchase power costs should initially be assigned to domestic loads.

So basically you'd have the same treatment for purchases as you do for Brandon fuel and related costs.

MR. BYRON WILLIAMS: Now, does this same reasoning or principle apply to wind power purchases?

MR. WILLIAM HARPER: In the case of wind

purchases, I've had a chance to review the matter further and I've also considered them in the context of Manitoba Hydro's other costs and planning.

In my view, it would be reasonable to treat them just like any other domestic source of dependable energy and not initially assign any of their costs to exports. A portion of wind power costs will eventually be allocated to firm exports through the allocation of generation costs.

In my mind, whether you've contracted to buy DSM for a customer or you've contracted to buy wind power or you've spent dollars and made commitments to get SSE improvements at particular sites or advance or to develop domestic generation, they're all commitments. You've spent the money and you're going to have the resources available and they should be probably all treated on a similar basis.

It should be noted that my proposed change in the treatment of purchases, including wind purchases, will impact on the calculation of the kilowatt hours of export attracting water rentals.

However, once the water rentals attributed to exports have been determined the recommended method would apply with 45 percent of the water rentals being assigned to opportunity exports and the remaining 55 percent being assigned to firm exports to eventually be included in the allocation of the overall generation costs.

MR. BYRON WILLIAMS: Thank you Mr. Harper. Let's turn for a couple of seconds to the various --

THE CHAIRPERSON: Mr. Williams, if you don't mind we're just going to take a five minute break. We will be right back.

--- Upon recessing at 11:20 a.m.
--- Upon resuming at 11:29 a.m.

THE CHAIRPERSON: Okay, folks, if we could return to our task.

MR. BYRON WILLIAMS: Thank you, Mr. Chairman, and Members of the Panel. I did -- I was somewhat remiss or perhaps they snuck in while I had my back turned, but both Ms. Hunter from the Manitoba Society of Seniors and Ms. Desorcy from the Consumers Association are here and I welcome them.

THE CHAIRPERSON: Well, Mr. Williams, I also want to ask Mr. Peters if he could provide some housekeeping notes.

MR. BOB PETERS: It was a point, Mr.

Chairman, that I had mentioned yesterday that we have set ourselves as having to complete the evidence this week to allow us to have the closing submissions next week, as I indicated yesterday on the transcript.

To that end, parties are aware that the Board will be standing down at 3:30 today due to a prior commitment, but the Board is available to resume tonight at six o'clock if necessary, to continue with the evidence of Mr. Harper in an effort to hopefully conclude his cross-examination questions.

So I'll throw that out there. We'll see how the timing goes and see how long the parties are. It will also be helpful for parties to let me know at the lunch break what their commitments might be in terms of Mr. Lazar tomorrow because that's the other -- the next matter that we would be addressing.

So we are available to sit and plan to sit tonight at six o'clock to conclude unless I get back to the Board otherwise.

THE CHAIRPERSON: Very good, you can consult then Mr. Peters with other parties as necessary.

Mr. Williams ...?

CONTINUED BY MR. BYRON WILLIAMS:

MR. BYRON WILLIAMS: I think when we took our brief break, Mr. Harper, we were turning to the various transmission related charges that Manitoba Hydro has directly assigned to exports. And I wonder if you could briefly review the treatment of these and your recommendations?

MR. WILLIAM HARPER: The first of these are the transmission service charges and these are the payments Manitoba Hydro makes for transmission services outside of the province.

Manitoba Hydro has confirmed that these charges are all related to exports and, therefore, assigning them directly to exports based on the fifty-five forty-five (55/45) split that they proposed is reasonable.

Furthermore, since such services are only required to support exports, it would seem reasonable to retain the 55 percent directly assigned to firm exports as an export cost and not include it in the allocation of generation costs.

In the case of the membership and legal fees associated with the MISO and MAPP, Manitoba Hydro has the knowledge that participation in these organizations has benefits over and above the creation of -- of export revenues.

Unfortunately, this perspective is not

adequately captured in the recommended method, where the costs are initially all assigned to exports and domestic loads only attract a portion by virtue of the fact of the 55 percent that's assigned to firm exports and then subsequently allocated through the subsequent allocation process.

However, the dollars involved here are relatively small, roughly $5 million as we heard this morning, and attempts to develop a more refined treatment are unlikely to have a material impact on the cost of service results.

In contrast, Manitoba Hydro has chosen not to assign any of the costs associated with its external electricity trade function to -- to the export class. Arguably, this function supports both exports and purchase activities and, therefore, a portion should be attributed to exports. Again, the value is small, roughly $7 million.

Manitoba Hydro has acknowledged that it would be appropriate to review the current treatment of -- of these costs. At the same time perhaps they could also review the treatment of the MISO and MAPP fees and related expenses.

In the meantime, the treatment proposed by Manitoba Hydro for these two (2) small cost items is acceptable as an interim solution.

MR. BYRON WILLIAMS: Finally in this area, Mr. Harper, perhaps I can persuade you to offer some thoughts on Wuskwatim in terms of, in the event it comes online, how it should be treated in the cost of service study.

MR. WILLIAM HARPER: As Mr. Warden has indicated, the Wuskwatim partnership arrangement with NCN means Wuskwatim will be accounted for in Manitoba Hydro's books slightly differently than other generating stations and power purchases. This will require some sorting out.

However, putting this issue aside, at this time I would see treating Wuskwatim similar to DSM, wind or SSE, or other resources that have been advanced to secure exports, that is include the costs in the pool of generation costs to be allocated to firm exports and domestic load.

However, the in-service date for Wuskwatim, as you've indicated, is a number of years off. And I'm sure this question will likely be revisited again before we get -- get to the in-service date of Wuskwatim.

MR. BYRON WILLIAMS: Just in -- in this area of the direct assignment of costs to exports, I wonder if you can summarize what you would recommend to the Public Utilities Board in this general area.

MR. WILLIAM HARPER: Based on my -- based on my preceding comments, there are essentially three (3) areas where I would suggest changes need to be made at this point in time.

The first is with respect to power purchases from neighbouring jurisdictions. I believe they should be treated the same as the Brandon fuel costs, initially assigned fifty fifty (50/50) to exports and domestic sales, as opposed to all being initially assigned to exports.

Second, with respect to wind power purchases, I believe they should be allocated along with other generation costs, to firm exports and domestic load.

And third, with respect to transmission service costs, they -- they should all be directly assigned to exports and there should be no secondary allocation as part of generation costs.

As a consequence of the first two (2) changes, the initial assignment of water rentals to exports would have to be adjusted. Remember, water rentals are determined based on the hydro that is assumed to support exports after you've identified the purchases and the fuelling costs associated with exports.

So if you change the assumption on

purchases, you're going to have to subsequently adjust -- correspondingly adjust the amount of water rentals you assume are associated with -- with exports.

MR. BYRON WILLIAMS: Let's turn for a moment to the allocation of transmission costs to domestic load and firm exports. And I believe in your written pre-filed evidence you concurred with Hydro's separation of transmission facilities as between domestic and interconnections.

And I wonder if you have any comments on their more recent conclusion that the two (2) should not be separated but rather, that all transmission costs should be allocated among firm exports and -- and the domestic classes based on two (2) CP.

MR. WILLIAM HARPER: I believe I pointed out in my evidence that there was no real science involved in the choice of energy as an allocator for interconnection costs, particularly as between domestic load and exports.

This was also evident in an IR response I gave to MIPUG who inquired as to whether the use of marginal weighted energy by time of use would be preferable to strictly using an -- an energy based allocation. And I said that that also warranted some consideration.

Manitoba Hydro has subsequently confirmed in its undertakings that the key consideration in the construction and costs of inter-ties is firm transfer capability, that is megawatts as opposed to energy, which would suggest that allocating costs based on capacity similar to domestic transmission is appropriate.

As a result, I'm not opposed to Manitoba Hydro's currently suggested approach.

MR. BYRON WILLIAMS: Just before we leave transmission cost area, I believe Intergroup in its evidence suggested that if a separation is maintained as between inter-connections and domestic lines, then one (1) CP should be used as the allocator for domestic lines.

And I wonder if you could comment on that as well as the reasonableness of allocating transmission costs to firm but not opportunity exports.

MR. WILLIAM HARPER: With respect to the first question, I agree with the position that Manitoba Hydro took in their rebuttal, which is that domestic transmission lines are involved in exporting of electricity and therefore the two (2) CP allocator that recognizes the significance of summer exports as well as winter domestic load it is appropriate.

In order to arrive at this decision,

effectively what I did is I looked at system map that Manitoba Hydro had filed in response to CAC/MSOS MH-1-12(c). And from that map it seemed self-evident to me that a lot more lines than just the HBDC lines and the inter-connects would be involved in getting power from the northern facilities to the inter-connection points.

It would involve considerable use of the domestic transmission lines that sort of join those two (2) facilities. And so on that basis I concluded that sort of Manitoba Hydro's position seemed reasonable.

With respect to your second question, Manitoba Hydro has indicated that transmission investment is primarily related to servicing domestic loads. Having said this, firm exports represent a commitment of existing transmission capacity for planning purposes just like domestic loads do.

Also Manitoba Hydro has acknowledged that some limited investment has been made in inter-connections primarily to facilitate firm exports. As a result it seems reasonable to allocate firm exports a share of transmission costs.

In the contrast, opportunity sales do not place any long term obligation on the transmission system and in fact are only undertaken when system conditions permit and capacity is available. Overall not allocating any fixed transmission costs to opportunity exports likely helps offset and balance the fact that allocating firm exports a full share, similar to domestic load, likely overstates the costs actually incurred to accommodate these -- these export sales.

MR. BYRON WILLIAMS: Mr. Harper, you'll recall that near the onset of your evidence you outlined the two (2) key issues in this Hearing from your perspective, one (1) being the treatment of export revenues, the other one (1) being the allocation of generation costs.

Let's turn to the allocation of generation costs and outline the major changes that Hydro has proposed in its recommended method.

MR. WILLIAM HARPER: There are two (2) key changes. The first is a change in methodology and the second is a change in terms of the customer classes that are included in the allocation base itself.

With respect to the methodology Manitoba Hydro's proposal is to classify generation costs into four (4) time periods based on the energy consumed in each period, weighted by the relative marginal cost of generation for each of those periods.

The generation costs in each period are then allocated to customer classes based on each class' share of the energy -- of the energy actually produced in that time period.

The approach is very similar to that recommended by NERA except that Manitoba Hydro uses prices from its surplus energy program as a proxy for marginal costs as opposed to its commercially available PLATS (phonetic) data that was used by NERA.

MR. BYRON WILLIAMS: Mr. Harper, MIPUG is or Intergroup has expressed concern that the proposed methodology does not follow the traditional approach of classifying generation costs as demand or energy related and then allocate each separately based on each class' capacity and energy use respectively.

Do you share that concern?

MR. WILLIAM HARPER: No I don't. In principle the approach used by Manitoba Hydro will capture both demand and energy cost considerations.

Demand costs are the costs incurred to ensure that sufficient capacity is in place to meet maximum demands that will be placed on the system during critical periods of the year.

The current method defines the critical periods of the year as the fifty (50) top winter and the fifty (50) top summer hours and allocates capacity costs based on each customer class' contribution to those hundred (100) hours.

This is really equivalent to allocating capacity costs to customers based on their energy use in the top hundred (100) hours of the year, if you think about it. The use of hourly marginal costs to weight the various hours of the year is really an analogous approach to that.

The high load and tight supply hours of the year will attract marginal capacity costs, as well as marginal energy costs and will be assigned a higher weight in Manitoba Hydro's allocation process.

As a result, there is no need to separately classify generation costs as demand or energy related. The marginal costs weightings themselves capture the importance of both of these on an hourly basis.

What is critical is that the hours of the year be broken down into a sufficient number of periods so as to isolate those high cost hours, i.e., the hours where -- the hours which are likely to be the ones where the marginal cost reflect both capacity and energy cost considerations.

This is particularly important if usage by customer classes in those high cost hours is different than it is in other hours of the year and I think this was something that Mr. Jurgensen (sic) was just pursuing with the Hydro Panel earlier this morning.

And hence this gives rise to questions posed by both MIPUG and myself as to whether or not the four (4) time of use periods proposed by Manitoba Hydro are appropriate and really are they sufficient or should we have more time of use periods?

In its rebuttal evidence Manitoba Hydro has demonstrated that the results from using twelve (12) periods; that is a peak, a shoulder, and an off-peak period in each of the four (4) seasons yields virtually the same results.

On its own this would suggest that there is little need to make further refinement. However, given the fact that the marginal costs for the four (4) periods are actually derived from an interpolation that starts with those twelve (12) periods, it would actually be simpler to use the twelve (12) periods to start off with and avoid all the arithmetic and gyrations that are necessary in order to come up with the four (4) period rates that are used in the proposal.

As a result, I would recommend that for the purposes of accuracy and simplicity Manitoba Hydro use the twelve (12) time of use periods in its weighting of generation costs.

MR. BYRON WILLIAMS: Thank you, Mr. Harper. We'll call Mr. Feldschmid, Mr. Jurgensen from now on.

MR. WILLIAM HARPER: I apologize.

MR. JURGEN FELDSCHMID: That's fine with me.

MR. BYRON WILLIAMS: I think it's actually kind of a nice name.

MR. WILLIAM HARPER: I should never try to do that.

CONTINUED BY MR. BYRON WILLIAMS:

MR. BYRON WILLIAMS: I wonder just on this issue if you could address the question of whether the SEP rates, which are based on -- largely on opportunity export prices, are a reasonable proxy for the marginal cost of both capacity and energy?

MR. WILLIAM HARPER: Yes, I covered this on pages 16 and 17 of my evidence. Typically, one would expect opportunity prices to be less than firm export prices due to the capacity commitments associated with firm export sales. However, the opportunity sales prices that underlie the SEP rates are influenced by market conditions and when energy is scarce the prices can be higher than the contracted firm export prices.

For the period over which the SEP rates were averaged, the average annual revenue from opportunity exports was only marginally less, roughly 3 percent, than that from firm exports.

In my mind this sort of highlights the fact that one is a reasonable proxy for the other and also highlights the need to use a historical average of SEP rates and to ensure that the years involved capture a range of system conditions.

MR. BYRON WILLIAMS: Mr. Harper, the second major change you noted with respect to the treatment of generation costs was the change in customer classes, including the allocation process. I assume by that you were referring there to the inclusion of firm exports; is that correct?

MR. WILLIAM HARPER: Yes. You'll recall my earlier discussion regarding the treatment of export revenues. I know that there are really two (2) objectives. The first was to recognize in the cost of service process that generation costs were incurred to support exports while the second was to ensure that the allocation of any identified net export revenue was not allocated in a way that was inconsistent with the principles of cost causality.

Including firm exports along with domestic loads and the allocation of generation costs seeks to address the first of these objectives.

MR. BYRON WILLIAMS: Well, following that logic, why not also include opportunity exports in the allocation of generation costs?

MR. WILLIAM HARPER: The rationale is very similar to what I outlined as to why firm but not opportunity exports are included in the allocation of transmission facility costs.

While the potential revenue for both firm and opportunity sales are factored into Manitoba Hydro's decisions regarding the advancement and design of facilities, Manitoba Hydro has indicated that the incremental cost incurred to serve exports is less than its average embedded costs.

This would suggest that exports should not attract the same level of transmission and generation costs per unit of service delivered. However, it's impractical to actually determine the embedded costs on Manitoba Hydro's books that are associated with -- with exports.

Indeed the view of what our incremental costs are associated with exports can actually change over time. Plants that were originally advanced in order to achieve exports are now being used solely to meet domestic load and, therefore, do you consider them to be export related or do you consider them now to be all domestic related?

Given the fact that firm exports represent a long-term commitment of dependable energy resources and generating capacity while opportunity exports are made when conditions permit and the greater service reliability firm exports have relative to opportunity sales, it is likely that the incremental costs incurred to support firm exports are greater than those to support opportunity sales.

Indeed, in my mind, this is clearly demonstrated by Manitoba Hydro's willingness to construct the Brandon gas-fired units primarily on the basis that the cost of those units would be recovered by allowing the Utility to firm up existing opportunity sales and basically make them firm sales.

As a result, the approach taken by Manitoba Hydro whereby firm exports attract generation costs on par with domestic loads while opportunity costs -- opportunity exports are not included in the allocation represents a reasonable comprise and tries to capture the differences between these two (2) types of export classes.

MR. BYRON WILLIAMS: I want to direct

your attention to a comment made by the witnesses from Intergroup in their response to CAC/MSOS Interrogatory number 7, and where they suggested that the creation of an export class does not ensure that exports are allocated the costs incurred to serve them.

And the seem to suggest that the approach does not track the costs incurred for exports since Hydro is willing to pay up to avoid a cost, i.e., the value of exports for the additional resources and marginal costs -- excuse me, for additional resources and, as well, that marginal costs are higher than the costs allocated to exports through the cost of service study.

What's your view on this issue?

MR. WILLIAM HARPER: First, I think I've said it already and I agree with the point that the methodology doesn't track the actual investment decisions and actions Manitoba Hydro has made with respect to exports. Indeed, I believe Manitoba Hydro itself has acknowledged this. As I said, it's -- it's likely it would be impractical to do so.

Having said this, I don't believe the overall approach is unreasonable. Intergroup's suggestion that since Manitoba Hydro is willing to pay up to its avoided costs, that five point three five (5.35) cents for generation, for DSM, supply site enhancement, power purchases and new generation, and then the allocation of embedded into transmission costs is only roughly four (4) cents, will not cover these costs.

However, this assumes that Manitoba Hydro has actually incurred its avoided costs for all the exports, and this is incorrect.

Actually, there is a couple of ways you can get -- you can get a handle on this. First is if you turn to the CAC book of references, Tab 8, and basically that -- that includes a -- that includes the cumulative DDSM results that were filed with the 2004 GRA.

MR. BYRON WILLIAMS: Perhaps you could hold just one second, Mr. Harper, while they turn there.

(BRIEF PAUSE)

MR. WILLIAM HARPER: If you go to the second page under that tab, you'll note that the -- that the total resource cost test, that is the ratio of costs avoided to costs that were actually spent, not only Manitoba Hydro's costs but actually the costs of participants, up until that point in time was two point five (2.5) to one (1), and that over the longer term they expected it to be one point six (1.6) to one (1).

This -- this would suggest that the actual costs incurred by Manitoba Hydro to achieve DDSM savings are significantly less than whatever the avoided costs. If they're equal to avoided costs and there were no participant costs, the ratio would be one (1). The fact that it's one point six (1.6) to one (1) means that Manitoba Hydro's costs are substantially less than their avoided costs.

In the case of the supply site enhancements, actually if you turn to just the next tab in the CAC book -- book of references, that's Tab 9, and I believe this -- this tab has been referred to already, you note that the internal rates of return for the various supply site enhancements range anywhere from 10 percent up to 30 percent.

Now, Mr. Mayer will probably recall from the Wuskwatim proceeding that Manitoba Hydro's cost of capital is in the order of 5 or 6 percent, depending upon whether you want to give any extra premium to the equity component.

The fact that the internal rates of return here are between 10 and 30 percent again would suggest that the costs of actually undertaking these activities are substantially less than the -- than the avoided costs.

If the cost -- if the cost of the activity was equal to the avoided costs you'd be seeing internal rates of return in the order of 5 or 6 percent as opposed to the 10 to 30 percent that we're seeing here.

Similarly, and I think I mentioned the Brandon earlier, and actually during the Wuskwatim proceeding, the business case for the development of the Brandon gas-fired units was filed as part of that proceeding, and the internal rate of return for that project was -- was 13 percent, which is a little over double what was Manitoba Hydro's cost of capital.

So, again, I would suggest this shows that there was an investment here where Manitoba Hydro did not have to spend up to anywhere near its avoided costs in order to -- to achieve the benefits it was looking for.

Similarly, Mr. Mayer, you'll probably recall that even Wuskwatim itself, I think the internal rate of return there was in the order of 9 or 10 percent, depending upon how you did your arithmetic.

MR. ROBERT MAYER: Or who you listened to.

MR. WILLIAM HARPER: Yes exactly. And again so I think the issue is, well yes, Manitoba Hydro has acknowledged it will spend up to that, there are clearly lots of cases where they haven't.

And indeed even these new sources of

supply don't make up all of the surplus energy -- dependable energy that Manitoba Hydro is currently involved in exporting, which is roughly 4000 gigawatt hours.

CONTINUED BY MR. BYRON WILLIAMS:

MR. BYRON WILLIAMS: Just following up on that last point, what's the significance of the fact that the new sources of supply don't make up all the 4000 gigawatt hours you've referenced?

MR. WILLIAM HARPER: Well this would suggest that some of the surplus is coming from -- say -- let's say I hate to use the word, but older investments that Manitoba Hydro may have made previously that are still contributing somewhat to surplus dependable energy on the system.

And clearly those older investments would have been made in earlier years dollars. And you know, the fact that they were moved forward means actually that the cost in this year is less than if it hadn't been.

MR. BYRON WILLIAMS: Thank you. And I believe the -- just moving to a slightly different subject and I think The Chair referenced this morning.

Apart from Hydro's suggested approaches to dealing with export revenues, there's been -- you'll recall that there are alternatives proposed by MIPUG's consultants, by Mr. Lazar and even Mr. Warden.

And I'd like to get your reading on each of these so -- let's start with the Intergroup team. They propose that excess export revenues be determined using a revenue based threshold and then any excess be directed towards a special reserve for the stabilization of rates in the event of a drought.

Apparently that's supposed to be more simple. Could you give me your view on the Intergroup proposal?

MR. WILLIAM HARPER: First, if I wanted to construct a threshold, I don't believe that export revenues as a percent of total revenues would be the correct metric.

As I noted earlier, the real problem is that the unit value of exports exceeds domestic sales. Higher export volumes may compound the problem but there is not a problem unless export prices exceed domestic prices.

The approach recommended by Manitoba Hydro actually captures this relationship since it costs firm exports on the same basis as it does domestic sales, puts them on the same basis and then the excess over that is what's deemed to be excess export revenues.

Second, the only way that excess net export revenue can be made available for appropriate to a special drought reserve is if they are not returned to customers through rates.

Instead the planned appropriation for such a reserve would become a cost. This would effectively lead to a higher rate increase than would otherwise occur. And indeed for each $10 million set aside in the rate setting process for such a reserve, the rate increase will be roughly 1 percent higher for all domestic customers.

MR. BYRON WILLIAMS: Leaving aside the issue of whether that's an appropriate recommendation for a cost of service proceeding, what's wrong with the concept, if increased debt levels due the most recent drought and the risk of future drought are a concern?

MR. WILLIAM HARPER: I guess in my view, the rate decisions that are made by the Manitoba Public Utilities Board in relation to Manitoba Hydro's GRA's already involve a careful consideration of Manitoba Hydro's net income, its financial position, its financial risk and its financial targets.

I don't see any necessity to make a separate appropriations for drought reserves. Indeed if such appropriations were made then the PUB would seriously have to rethink the criteria used in determining Manitoba Hydro's net income levels since the issue of risk -- or drought risk mitigation would all be addressed separately.

And really that's one (1) of the main things you're thinking about now when you're thinking about the level of appropriation for net income, just straight net income, is concerns about reserves and drought risk mitigation.

If there are separate funds for that that are being addressed elsewhere then maybe certain holds or different metrics have to now be developed in terms of how they can determine what should be the regular appropriation for net income as opposed to these special appropriation for the drought reserve.

However and I guess maybe this is where we're having a bit of a problem. If the need for such reserves are to be considered in my view it is best addressed in a GRA proceeding which specifically deals with questions such as risk management, financial integrity and the resulting rate increase levels on customers, as opposed to within a sort of cost of service methodology, proceeding like we have here.

MR. BYRON WILLIAMS: While we're talking on drought risk, could you please give me your understanding as to the basis for the $2 billion estimate that has been referenced in this proceeding?

MR. WILLIAM HARPER: Yes, as I recall the $2 billion figure arose during the oral part of the 2004 GRA proceeding. At the time Manitoba Hydro's witnesses indicated they were developing a methodology that would consider the variability and the uncertainty in the factors that could influence the cost of drought.

They went on to estimate there was a reasonable possibility that the cost of a five (5) year drought could increase to as high as $2 billion, but did not have any quantitative analysis.

Since then there's been really no further information such as the results of their methodology or the reports from consultants that they'd indicated they were hiring to assist them with this provided by Manitoba Hydro to support the $2 billion figure.

Furthermore, there's been no discussion or debate as to how much of this risk should be mitigated through the build up of retained earnings as opposed to address it perhaps through other means. There are a number of issues that I think are worth exploring before the value of what you think should be the reserve set up for drought is carved out in stone.

For example, the $400 million drought that we talked about in 2003/2004 was based on the third worst year on record in terms of water flows. It was aggravated by high natural gas and power prices.

It is reasonable to question whether the reserves we want to accumulate should be accumulated to cover what could be considered to be a multi-year repeat of what's close to a worst case scenario or whether you'd want to, sort of, do it -- look at a range of probabilities and establish some band, 90 percent, 95 percent band and try and determine the same thing.

A lot more science and rigour can be put to what's the appropriate size of the reserves that are needed.

Also the $2 billion presupposed that there would be no actions taken during the drought to reduce the impact. For example, starting to introduce higher rate increases to consumers once we saw that the drought was starting to go on for a couple of years.

There are trade offs involved here. Really does the consumer want to pay up front and create a reserve and contribute money to Manitoba Hydro which maybe involves a lower return or do they want to keep their money in their pocket, maybe at a higher return but face the potential of -- of higher rate increases when there's a drought.

That again is a debate that's important to have.

MR. BYRON WILLIAMS: I guess largely that's a debate for the other proceeding. Could you please comment on Mr. Lazar's recommendations in terms of the cost of service proceeding?

MR. WILLIAM HARPER: Yes. As I understand, Mr. Lazar's recommendations are to gradually increase Manitoba Hydro's rates so as to not only remove the cost offset provided by the net export revenues but to move the rates up to a level commensurate with full costing that considers both avoided costs and environmental opportunity costs.

The additional monies would be used by Hydro and the government to fund programs, both in the energy sector and elsewhere, as well as to reduce taxes. At the same time, the higher rates would encourage an efficient use of electricity.

My first observation is that this recommendation goes well beyond the scope of the current proceeding into Manitoba Hydro's cost of service methodology. It may even go beyond -- well beyond the scope of the current statutory framework established for Manitoba Hydro. But I'll let the lawyers, like Mr. Williams, debate that.

The second observation is that unless implemented at a snail's pace even a gradual introduction would have significant implications. For example, a ten (10) year plan could lead to annual increases in every year of 10 percent. And if you think of implementing gradually, it is often thought of ten (10) years. Well, the types of rate increases we're talking about here even a ten (10) year plan would have significant increases each year.

My only hope would be that any changes fundamental as what Mr. Lazar is proposing would be carefully thought out. To start with, the consumption changes associated with the price changes he's contemplating are crude estimates of both as the -- since the estimates applied are illustrative examples from other jurisdictions as opposed to representing Manitoba and they're probably not relevant given the magnitude of price change that Mr. Lazar is talking about and that's something that Mr. Wiens spoke to this morning.

Also, Mr. Lazar has suggested that the implications and the impacts of more than doubling electricity prices could be offset by cuts in taxes and other consumer costs. My -- my real concern is that either, A, all the implications will not be fully understood before such a plan is initiated or the necessary remedial actions will not be put in place.

And I say this coming from a province where in recent years public policy with -- with respect to electricity and energy has seen significant changes implemented, in my mind, without a sufficient understanding of what are the implications or are we ready for those changes.

So I would just sort of, from that perspective, offer a word of caution because in the end it's consumers that bear the brunt of those changes.

Finally, if Mr. Lazar's objective is to influence electricity consumers' consumption decisions as opposed to generating additional funds for government, I believe rate design is the first place to start. Similarly, if Mr. Lazar's objective is to generate more funds to support DSM this would seem to suggest Manitoba Hydro currently has a funding limit on DSM which, to my understanding, is not the case.

MR. BYRON WILLIAMS: Well, we've chatted about the Intergroup evidence as well as Mr. Lazar's evidence. In the course of this proceeding there's also been a discussion of alternative ways of treating export revenues and there's been some suggestion that Manitoba Hydro should simply focus on the pre-export allocation of RCCs; could you please comment on this?

MR. WILLIAM HARPER: Yes. I must admit that I didn't quite follow or understand Mr. Warden's suggestion that this approach has extra merit as long as Manitoba Hydro has not achieved its debt equity ratio. I don't see how Manitoba Hydro's financial position relates to the applicability of pre or post export -- pre or post export allocation RCC's.

Second, I don't agree with the suggestion that using this approach avoids the debate over the treatment of export revenues.

First, the results would be different depending upon one uses the current method for -- for determining pre-export allocation costs and RCC's, or uses the recommended method, or in fact uses NERA's method. Each of them give you different pre -- pre-export allocation RCC's.

So it will be necessary to -- to decide on the question of whether the cost of service should be included in customer class for exports, and if so, how many. Those questions will still have to be resolved.

Third, by using pre-export allocation RCC's, one is not really avoiding the issue. Implicit in the indexing to 100 percent is the allocation of the difference between domestic revenues and costs, which is simply the net export revenue. By using the pre-export allocation RCC's, one has effectively made -- made a decision, whether one likes it or not, as to how export -- net export revenues are to be allocated.

Indeed, if my -- if my back-of-the-envelope analysis is -- is correct, the use of pre-export allocation RCC's is effectively the same as allocating net export revenue to customer classes based on their relative revenues.

This is not much different than Manitoba Hydro's current method, which -- which basically allocates net export revenues on the basis of allocated costs and -- and will tend to spread the results over a wider -- over a wider base than just the GMT allocation used for -- for the current method.

Both -- both of these approaches are reasonable since we're talking about the allocation of net export revenues after having accounted for the costs associated with export.

Where, if I was asked to decide and make a choice between the two (2), I'd probably go with the Hydro approach for two (2) reasons. One is it uses costs as opposed to revenues. And the second is that the overall methodology is -- is more transparent in that it explicitly deals with and shows you how those net export revenues are being determined and how they're being allocated.

MR. BYRON WILLIAMS: Mr. Harper, does this conclude your opening comments?

MR. WILLIAM HARPER: Yes, it does.

MR. BYRON WILLIAMS: Are you available for cross-examination?

MR. WILLIAM HARPER: Yes, I am. I was tempted.

MR. BYRON WILLIAMS: Now, once -- once -- just referring to Rule 17-5 of -- of the Draft Rules of Procedure, once he's made that final fatal admission, I think the Rules provide that pre-filed written evidence may be received in evidence at the hearing with the same force and effect as if it were stated orally.

So just given the fact that Mr. Harper has testified to his qualifications, confirmed that the material was prepared under his direction and indicated, however unwillingly, his readiness to submit to cross-examination, I'd ask that his pre-filed evidence, which is CAC/MSOS Exhibit number 1, be entered as -- as if it had been read.

THE CHAIRPERSON: That would be fine. Thank you. So Mr. Harper can prepared himself now for the cross-examination while we have our lunch break. And we'll be back at -- we're closing at 3:30, so we'll come back at 1:15.

--- Upon recessing at 12:05 p.m.
--- Upon resuming at 1:18 p.m.

THE CHAIRPERSON: Whenever you're ready Mr. Williams?

MR. BYRON WILLIAMS: I am done except for to again get Mr. Harper's confirmation that he's ready for cross-examination.

MR. WILLIAM HARPER: We're ready.

THE CHAIRPERSON: Thank you, Mr. Williams. Okay. Mr. Feldschmid...? I don't see him.

MR. BYRON WILLIAMS: Mr. Jurgenson has no questions.

MR. WILLIAM HARPER: He's not going to let me forget that.

THE CHAIRPERSON: He must be very satisfied with you.

Mr. Buhr ...?

MR. DOUG BUHR: I have no questions, Mr. Chairman.

THE CHAIRPERSON: Thank you, Mr. Buhr. Ms. McCaffrey...?

CROSS-EXAMINATION BY MS. TAMARA MCCAFFREY:

MS. TAMARA MCCAFFREY: Good afternoon, Mr. Harper.

MR. WILLIAM HARPER: Good afternoon.

MS. TAMARA MCCAFFREY: Nice to have you with us again.

Mr. Harper, in a regulated monopoly such as Manitoba you would agree with me, sir, that the role of the regulator is to balance interests of the ratepayer and the utility, correct?

MR. WILLIAM HARPER: That's one of its roles, yes.

MS. TAMARA MCCAFFREY: And also another one (1) of the roles would be to protect ratepayers in cases, particularly where their interest may diverge from the interest of the utility, is that fair?

MR. WILLIAM HARPER: Yes, that's fair. I think that's one of the reasons you have regulation of a monopoly, yes.

MS. TAMARA MCCAFFREY: And you've stressed the importance of that, that regulation in monopoly jurisdictions before, before the Public Utility Board, this is nothing new that we're going through here.

In Manitoba, of course, there is no competitive market, there is no choice for ratepayers which would hold the utility accountable. And therefore, it's the Public Utility Board that performs that function?

MR. WILLIAM HARPER: I guess in the sense that there's no alternative place for them to buy electricity except for Manitoba Hydro, that that's correct. I mean customers do have choices about whether they use electricity or gas or something else --

MS. TAMARA MCCAFFREY: Right --

MR. WILLIAM HARPER: -- but just in terms of looking at electricity itself, you're right.

MS. TAMARA MCCAFFREY: Sure. What I'm -- what I'm talking about is of course they don't have any choice of where they get the power from in this jurisdiction, unlike Ontario, where you're from.

MR. WILLIAM HARPER: That's correct.

MS. TAMARA MCCAFFREY: And again part of the role that the regulator performs in this type of monopoly jurisdiction is ensuring that the company is efficiently managing its business and being as effective as possible with the dollars that it has and any additional dollars it would be given, in terms of a rate increase for example.

Would you agree with that?

MR. WILLIAM HARPER: Yes in a broad

sense, yes, I'm not too sure how far a regulator can go at ensuring somebody is efficient from a micro-management perspective, but, in a broad sense in trying to encourage them and ensure that, you know, they're demonstrating efficiency before the approval a level of rate increase for them, yes.

MS. TAMARA MCCAFFREY: Well, sure and that's what rate hearings are all about, right, Mr. Harper?

MR. WILLIAM HARPER: Yes.

MS. TAMARA MCCAFFREY: For example, you've adverted to -- in response to an IR, you don't -- probably don't need to turn to it, I'll get back to it a little later but MIPUG/CAC/MSOS 5(b), you adverted to -- okay you can turn to it --

MR. WILLIAM HARPER: No I don't -- cause you said you'll get back to it later, I figure I might as well get there now --

MS. TAMARA MCCAFFREY: I'm referring to--

MR. WILLIAM HARPER: -- and save myself the --

MS. TAMARA MCCAFFREY: -- sure I just -- it's not a very detailed question. But, you did advert to a situation where if exports were not credited to domestic customers but used for some other purpose, the corporate interest in maximizing profit, for example, could be at the expense of the domestic focus.

I'm taking something that you've talked about, a splitting of the corporate interest --

MR. WILLIAM HARPER: Yes -- yes --

MS. TAMARA MCCAFFREY: -- at the risk of interest being at the domestic focus. And I'm sort of giving you an example.

MR. WILLIAM HARPER: Yes, I guess what I was trying to get at there was the fact that if, you know -- if any entity in Manitoba Hydro, for a sense has more than one (1) objective then there's a pressure to meet one (1) objective, there's a pressure to meet the other.

And if you're trying -- if you're trying to generate funds for a shareholder on the one (1) hand and on the other hand trying to keep rates down, there's going to be a tension between those two (2).

MS. TAMARA MCCAFFREY: And I'd think you'd agree with me, sir, that there should be some caution against that type of scenario developing?

MR. WILLIAM HARPER: Yes I would think so.

(BRIEF PAUSE)

MS. TAMARA MCCAFFREY: What would that look like, Mr. Harper? How would we know if that was happening?

MR. WILLIAM HARPER: Well, I -- I think first of all you would know it was happening in some sense because there was more than one (1) objective put to the Company whether it be a change in statute that sort of governs Manitoba Hydro, so it was clearer that there was more than just the current statutory responsibility, which is really just providing power at -- you know at -- providing power to consumers on an efficient basis.

If there were other objectives put into the Act, as well, then that would clearly be one (1) obvious demonstration that there was some tension arising.

I guess if you had, you know, government pronouncements, I don't know -- you know --

MS. TAMARA MCCAFFREY: What about if you had decisions of the utility in terms of rate design that might be aimed at discouraging Manitoba load, for example, would that be another indication that that might be happening, that splitting of interest?

MR. WILLIAM HARPER: Well, I guess I would ask them why they were discouraging the -- and I mean discouraging Manitoba load is a broad -- is a broad example, we're out here trying to implement DSM programs which somebody could look at as a discouraging Manitoba load, if you want to put that way, but I'm not too sure that's really not the -- depends on what you mean by discouraging sort of thing.

MS. TAMARA MCCAFFREY: I'm not thinking about DSM.

MR. WILLIAM HARPER: And you know --

MS. TAMARA MCCAFFREY: Go ahead --

MR. WILLIAM HARPER: -- I'm sorry -- you, know all, I guess all I was going to say, so when you say -- when you say discouraging you'd have to look precisely at the particular activity that was taking place before you sort of try to see, whether or not, it was inconsistent with the current -- with the current mandate of the Corporation.

MR. ROBERT MAYER: Mr. Harper, I'm not sure you're getting Ms. McCaffrey's point.

Manitoba Hydro's statute was specifically changed a few years ago to allow it to pursue export opportunity. It has now and we have evidence before us that -- there is a suggestion that Manitoba Hydro may come here and -- looking for rates -- for different rates for expanded industrial use.

And we have the documentation before us and I'm sure you've seen it. And that is at least taken by some, and I think reasonably so, to be discouraging use, not necessarily inefficient use but discouraging local use in order to pursue its export opportunity and therefore to try to -- I'm assuming to get to its financial target.

Isn't that one (1) of those varying or differing objectives that may conflict?

MR. WILLIAM HARPER: Yes it is and I guess, you know, you're right but there's a bit of -- it's an interesting situation in a sense that, you know, you're faced with a circumstances where that increased load would put upwards pressure on rates.

And so I guess there's a matter of, you know, you balancing -- you're trying to balance those two (2) concerns.

I guess in my own view, given sort of the longer term mandate of, you know, of basically providing electricity to Manitobans -- if I've got that -- sorry -- word correct -- I think unless there was a really significant concern about the level of impacts on rates, you might want to err on the side of Manitobans, if I can put it that way.

You know, there's a judgment, there's a

balancing any -- you know, utilities all have -- I'm sorry, now that we're more explicit about the issue, utilities all have capital expansion policies, you know, in terms of it, you know, when they're going to extend lines, in terms of what contributions they look to from customers as opposed to what -- what they're going to pay for themselves.

And you know what you put into those capital contribution policies can, as you've said, sort of be seen as signals as to how much you want to encourage the additional connections or not, on the same time as you're trying to balance the interest of existing customers.

So there is a balance there.

(BRIEF PAUSE)

CONTINUED BY MS. TAMARA MCCAFFREY:

MS. TAMARA MCCAFFREY: Thank you, Mr. Harper, and thank you to Vice-Chairman Mayer to helping to focus that question.

The Board has, I think, my point with the question and I hope so do you.

I want to talk a little bit about the context of risks now, in terms of the regulatory role, in terms of protecting ratepayers. You've expressed your view before this Board before and I think again today, that managing risks means quantifying risks, am I right, sir?

MR. WILLIAM HARPER: Yes, though I think it's hard to manage something if you don't understand the size of what you're managing.

MS. TAMARA MCCAFFREY: I totally agree with you. Would you agree, sir, that the greater risks faced by the Corporation are actually risks to the generation and transmission components of the system?

I'm thinking about drought or catastrophic infrastructure.

MR. WILLIAM HARPER: I guess if I understand -- you know if I understand -- if I hark back on sort of the risk management document that Manitoba Hydro produced a couple of years ago. And if I think of when they're talking about the risks, identifying risks they have and what areas of the company those risks are associated with, I think they're primarily associated with the generation side in terms of droughts.

I think there's been reference to, sort of, catastrophic loss of facilities, well those would probably be sort of, something like the HBDC facilities coming down from the north which would be transmission or generation, depending on how you -- whether you're talking cost of service or you're talking strictly the types of facilities you're involved in.

So I think as opposed to, you know, risks on the -- you know, you may have risks on the distribution side about ice storms and things like that, but I think distribution systems are fairly well spread throughout the Province.

So you're know, they're likely to be more localized. So I would think you're right, that you know, most of the larger risks are associated with the generation and transmission sides of the business.

MS. TAMARA MCCAFFREY: And taking that into account, it's not only important to quantify the risks of course to understand them, how can you deal with them if you don't understand what they are.

But, I think, sir it would be your position that it's also important to identify what risks you're specifically going to rely on the reserves in order to help manage, would that also be your view?

MR. WILLIAM HARPER: Yes, I think that's right and I think if I understand correctly from the risk management strategy that Manitoba Hydro was in the process of developing, it was a matter of you identify the risks, then you start identifying now that I understand the size of the risks, what are the mechanisms I'm going to use to mitigate those risks?

How much risk am I willing to open myself up to and what can I do to mitigate the risks? So one (1) way of mitigating risks is by establishing reserves. There are other ways you can mitigate risks.

You know, I mean, you can mitigate risks of foreign exchange by having, sort of, hedging on foreign exchange contracts, and this sort of thing. So there's many ways you can mitigate risk and reserves is one of them.

MS. TAMARA MCCAFFREY: And restricting retained earnings in terms of earmarking funds for the purpose of dealing with risks should they -- if and when they materialize would be another?

MR. WILLIAM HARPER: Well, I'm not too sure if, you know, the retained earnings are there right now to do with -- you know, to use. I'm not too sure if, sort of, -- sort of drawing a little red circle around part of them and saying these I'm going to restrict for certain use or not is going to reduce the risk any more than it was before.

So maybe you need to clarify a little bit more what you mean by that.

MS. TAMARA MCCAFFREY: I'm not talking

about reducing the risks. The risks may or may not materialize, in terms of drought they will. At any rate you have to plan for risks as if they will; that's what self-insuring means.

But what I'm talking about is ensuring that -- that funds are there for the purpose -- for that purpose, to deal with the risk --

MR. WILLIAM HARPER: Can I --

MS. TAMARA MCCAFFREY: -- should -- if and when they materialize; that's a good idea?

MR. WILLIAM HARPER: Yeah. Well, I guess and whether you call it a special reserve or it's part of retained earnings, I'm not too sure whether that makes any difference. It's a matter of how much -- you know, it's all on the positive side, the equity side of the balance sheet if you want to put it that way.

MS. TAMARA MCCAFFREY: But you'd agree that there could be some mechanism to ensure though that the funds are there for the purpose -- that purpose; that is that self-insurance, guarding against the risk purpose? Regardless of how you do it?

MR. WILLIAM HARPER: Yeah, you know, that would be one way of -- that would be one way of addressing that risk if you wanted to, yes.

MS. TAMARA MCCAFFREY: Which, of course,

is also important for stability of rates which we know is an important principle; correct?

MR. WILLIAM HARPER: Yes. And I think that's one of the reasons why we're talking about 75/25 as the debt equity ratio so that if you have a drought you don't have to have a 50 percent increase the next year in order to restore your retained earnings. You can take some time to restore your retained earnings and -- and, sort of, you -- while there's rate increase there's not abnormal rate increases.

MS. TAMARA MCCAFFREY: And when you're talking though about the debt equity ratio, Mr. Harper, I seem to recollect that your position was, and maybe still is, that that was a bit coarse in terms of risk management. Just taking 25 percent of the Utility's asset base wasn't maybe the -- the best way to go in terms of determining what you need to manage those risks; am I right?

MR. WILLIAM HARPER: Well, I -- yes, I think that's correct. I think as I talked about earlier, you know, there's an issue about quantifying the risks and understanding how you're going to mitigate those and that seems to me that in the end would lead you to some conclusions about what -- what you thought you needed in terms of reserves as part of your overall mitigation strategy.

I haven't seen any connection between the 25 percent and the process Manitoba Hydro has been going through on its risk management strategy development.

MS. TAMARA MCCAFFREY: And, of course, when we're talking about self-insurance and we're talking about guarding against the risks we are looking at a long-term impact; would you agree with that? It's a long-term consideration?

MR. WILLIAM HARPER: Well, I guess you're talking about self-insuring for some events that maybe have a small likelihood of occurring and if that means you're having to take a long-term consideration, yes. I'm not too sure what you mean by "long-term" precisely, Ms. McCaffrey.

MS. TAMARA MCCAFFREY: Well, maybe I'll -- just getting right to the point, you -- you are supporting the Manitoba Hydro proposal and you've already indicated what your views are of the proposal put forward on behalf of the -- the Intergroup consultants from MIPUG.

But you would agree that that proposal with respect to a drought or risk reserve provision would be something that would be intended to benefit ratepayers over the long-term? It would have to be built up in the long-term and should the risk materialize sometime down the road it would be there at that time; do you understand that?

MR. WILLIAM HARPER: No, I understand that. I guess my issue was I wasn't too sure conceptually how that differed that much from what Manitoba Hydro was doing now, sort of, and what the PUB was doing when it looked at individual applications for its GRAs in terms of whether or not the retained earnings there are sufficient, are being built up sufficiently quickly depending upon the current circumstance the Utility find itself in.

And that's why I said, whether you call it retained earnings in total or draw a little red box around part of it and call it, sort of, reserve for a drought, if -- if you were developing a drought reserve and you hadn't built it up enough and you had a significant drought you would end up using both the drought reserve plus general retained earnings in order to manage it.

So I don't -- like I said, my struggle was I really didn't see how conceptually it differed that much from what -- from what the Board is, sort of, trying to do with -- with Manitoba Hydro right now.

MS. TAMARA MCCAFFREY: But I think

conceptually you agree that the important point of having reserves for the purpose of dealing with risks is, of course, you want to make sure that the funds are there when you need them?

MR. WILLIAM HARPER: Yeah. You know, I guess the other issue is, on the other hand, you're thinking do I identify I think that risk management document of Hydro's had -- I'm trying to remember whether it was like twenty (20) risks or you know, maybe more than that involved and do I end up taking my retained earnings and carving it up into twenty (20) different little funds identified for each and that seems to be a little bit -- I don't want to use the word "silly" but maybe I will use the word silly in that sense.

In a sense of whereas right now what they have is they have an overall level of retained earnings that is trying to -- that is aimed at managing that overall. Because in the end if you set up these twenty (20) little funds and one (1) runs short you might find yourself borrowing between the funds in order to -- in order to address particular risks which -- which gets you back right where you were to start of with.

MS. TAMARA MCCAFFREY: You may not want to break it down into a separate fund for a separate risk, that might not make any sense. But -- and there's different ways of doing that, but I don't think you've answered my questions.

Conceptually, though, you agree, sir, that the point is you want to make sure that the funds are there, in fact, for risks if and when they materialize?

MR. WILLIAM HARPER: Yes.

MS. TAMARA MCCAFFREY: Otherwise what's the point; right?

MR. WILLIAM HARPER: Yes. That would be correct.

MS. TAMARA MCCAFFREY: And your -- your position supporting the Manitoba Hydro's proposed allocation of the net export revenues does provide a short-term benefit. The fall out from that is going to be a short-term benefit to -- to particularly low voltage customers; is that fair?

MR. WILLIAM HARPER: I guess -- I want to make sure I understand where you think the short-term benefit is coming from before -- before I answer the question because --

MS. TAMARA MCCAFFREY: If you like, I can -- I can help you out with that. I'm talking about the fall out from that would be a short-term benefit in terms of rates.

MR. WILLIAM HARPER: You know, I guess

and whether because there was some -- I want to be clear because, you know, there -- you know, you may be referring to benefits in two (2) senses.

One, in the sense that I believe that particular application ends up with a more favourable RCC for residential than the current method does and if you're interpreting that as being the -- the short-term benefit and what that might mean in terms of differential rate increases; that's one of the results of the methodology.

Another -- another way I was tending to interpret the short-term benefit comment was with respect to the fact that if, as opposed to taking those net excess -- those excess revenues and, sort of, using them to lower the revenue requirement and returning it to customers, one creates a reserve fund that therefore has more higher rate increases in the short term.

You know, that -- that could -- that sort of trade off could also be viewed as a short-term benefit. And I guess in that regard I guess my view is, like I said, is I think those trade offs are already made in terms of what's needed for appropriations for net income to safeguard against risk as opposed to what you need to cover costs.

MS. TAMARA MCCAFFREY: Short-term benefit and a long-term benefit as well in terms of the --

MR. WILLIAM HARPER: Well, well, -- you know, I hate to be arguing about this. But I think we're getting the benefit anyways in a sense that there's a -- you know, there's a process we go through now to decide what's a reasonable and appropriate amount of net income to appropriate in order to build -- build up the retained earnings.

And I guess at the extreme if we had a reserve here, I think I said in my direct over on the other side, you know, if you had $20 million in a reserve the decision might be I need $20 million less in net income to appropriate to the general balance sheet.

And at the end of the day the rate increase is the same for everybody.

MS. TAMARA MCCAFFREY: Okay. Okay. In terms of the -- part of your direct evidence you went through some of your experience with Mr. Williams. And one of the things that you talked about was working on cost of service issues advising, was it eighty-five (85) utilities; did I hear that correctly?

MR. WILLIAM HARPER: Well, I'm not -- there are roughly between eighty-five (85) and ninety (90). The numbers seem to change on a -- as people -- new utilities form, distribution utilities in Ontario.

The Ontario Energy Board is interested in having a common cost of service methodology that all utilities would apply the same methodology and they would all come up and be able to develop RCCs for their customer classes.

And I'm working on a technical advisory group that is basically trying to come up with what's the appropriate cost allocation methodology that these distribution companies should be using.

Now, since the distribution companies, the focus of it is only on distribution costs. So we're not talking about allocation of transmission costs. We're not talking about allocation of commodity costs. We're just talking about the allocation of the distribution costs, which includes street lighting.

So just for -- I'm trying to --

MS. TAMARA MCCAFFREY: Just give me a moment.

MR. WILLIAM HARPER: Sure.

(BRIEF PAUSE)

MS. TAMARA MCCAFFREY: So in your work -- in this type of work, of course, you're focussing on consistency of principles, right? That you want some common cost of service principles for all the utilities, is that right?

MR. WILLIAM HARPER: I think that that's correct. I think it's, you know, the unfortunate thing is when you're looking at a methodology that eight-five (85) people have to implement consistency, there's also a great deal of practicality involved in what you're actually going to -- going to sort of apply as a cost of service methodology, because this is going to apply to distributors like Hydro One that have over a million customers.

It's also going to apply to other distributors that maybe only have four or five hundred (400-500) customers. So I think, yes, yes consistency. I'm just saying that sort of to some extent, our deliberations in this particular process have been -- have been mitigated by pragmatism in a number of instances.

MS. TAMARA MCCAFFREY: And I'm certain that that would be the case. That certainly makes sense to me, Mr. Harper.

Where I'm -- the point I'm getting at is, of course, there's principles here at work though --

MR. WILLIAM HARPER: Yes --

MS. TAMARA MCCAFFREY: -- right? There's established --

MR. WILLIAM HARPER: -- you know -- that's right --

MS. TAMARA MCCAFFREY: -- cost of service principles.

MR. WILLIAM HARPER: -- and I think the same principles I talked about in my direct in terms of looking at the issue of cost -- cost causality and trying to -- in allocating costs on the basis of cost causality is the fundamental principle Board staff has been banging into our head on a regular basis.

MS. TAMARA MCCAFFREY: Sir, in your evidence you noted -- you made reference in a footnote to a Hearing that was held in Ontario in the 1970's, HR-5?

MR. WILLIAM HARPER: That's correct.

MS. TAMARA MCCAFFREY: In regards to doing cost allocation based on marginal costs, is that right sir?

MR. WILLIAM HARPER: Well, actually it was looking at marginal cost pricing but, I think in terms of looking at marginal cost pricing it was starting all the way back in terms of, you know, do I -- if I'm going to have marginal costs prices then you know, maybe that's -- if I have embedded cost base prices, I do embedded cost of service.

If I have marginal cost prices do I do a marginal cost of service and so it ended up covering the whole gambit, yes.

(BRIEF PAUSE)

MS. TAMARA MCCAFFREY: So the Hearing then it was known as ECAP, which is for electricity costing and pricing then?

MR. WILLIAM HARPER: That's correct.

MS. TAMARA MCCAFFREY: And can you confirm for the record that the Ontario Energy Board rejected marginal cost pricing as an alternative to embedded costs methods based on accounting costs, is that right?

MR. WILLIAM HARPER: Yes, that's correct.

MS. TAMARA MCCAFFREY: And I understand, sir, this Board decision followed a hearing that took two (2) years and one hundred thirty one (131) days?

MR. WILLIAM HARPER: That's correct.

MS. TAMARA MCCAFFREY: Kind of put things in perspective doesn't it?

MR. WILLIAM HARPER: You know and I think if you notice my evidence what happened is that that was sufficient time for, sort of, conditions on the system to change so much that even the concepts of what I thought were marginal costs going into the hearing weren't the same were marginal costs coming out of the hearing, because over two (2) years a lot can change.

MS. TAMARA MCCAFFREY: Mr. Harper, speaking about more recent times now, you'd agree that regulated utilities have pursued more efficient price signals via the rate designs moving forward from what was being proposed in Ontario back then?

MR. WILLIAM HARPER: Yes and I think it's fair even Ontario Hydro, I mean while I was there we had real time pricing, equivalent of your SEP rate. AS a matter of fact, I think we had a surplus power rate prior to the SEP rate if I'm not mistaken.

And so I think utilities have pursued sort of other types of rate designs.

MS. TAMARA MCCAFFREY: Now, I'm going to move a little bit further in that area, but before we leave this. From that order there was at least four (4) key principles that came out of that Order and you provided for MIPUG in your responses, in attachment (b) an except from that hearing --

MR. WILLIAM HARPER: Yes, it was the executive summary.

MS. TAMARA MCCAFFREY: -- that you referred to in your -- that's right; that you referred to in your footnote. What I'll do it's just -- I'll even just take you through it and read it into the record and that way everyone's sort of looking for it, we'll just put it right to you and we'll have it on the record and you can tell me whether these principles are still sensible, relevant today and I think you'll say that they are.

All right. So first --

MR. BYRON WILLIAMS: Ms. McCaffrey, just for my information, this is -- is this the attachment to Interrogatory number 6 from MIPUG? And it's --

MS. TAMARA MCCAFFREY: It's Attachment B, report to the Minister of Energy on principles of electricity costing and pricing for Ontario Hydro HR-5 December 20th, 1979.

MR. BYRON WILLIAMS: Thank you.

MR. WILLIAM HARPER: It was the response to the question 2(A).

MS. TAMARA MCCAFFREY: Rates -- the executive summary, I'm looking at the second page of that, it's roman numeral viii, the top of the page and then there's four (4) points that -- that we'll just go through together that I think are -- are -- are important.

"Rates should be sufficient to recover

Ontario Hydro's revenue requirement as
currently determined in the Annual Bulk
Power Rate Hearings. Meeting the
revenue requirement as calculated from
accounting costs is an important
pricing objective that provides
stability to rate levels."

That continues to be relevant today, sir?

MR. WILLIAM HARPER: Yes, it does.

MS. TAMARA MCCAFFREY: You define stability as -- how?

MR. WILLIAM HARPER: Well, I guess, you know, avoiding capricious changes. I mean, rates have to -- I mean, costs change, rates have to change, I guess. What you're trying to do is avoid, for want of a better word, sort of, capricious or perhaps unnecessary or unwarranted changes.

You know, and, you know, to be quite honest with you and just glancing down the list, the points here aren't that much different than the ones that Mr. Williams talked about with Mr. Wiens about his bedtime reading and the Bonbright sort of thing I think they're actually probably taken and paraphrased directly from Bonbright.

MS. TAMARA MCCAFFREY: And the second

one, then, would be that rates should be fair. And we talked a lot about fairness. Broadly defined as equal treatment of those causing equal costs?

MR. WILLIAM HARPER: That's correct. That's, sort of, the fairness objective I talked about myself in my direct.

MS. TAMARA MCCAFFREY: And the Board has interpreted that fairness objective as requiring that costs be tracked by rates to the extent practicable. Undue discrimination avoided and all consumption regarded as new consumption?

MR. WILLIAM HARPER: I guess -- yeah, those -- you know and I guess it's interesting the last one all consumption is new consumption is, sort of, is -- you talk about differences between fairness and equity and that's sort of -- I guess that's sort of an equity principle that -- that's adopted in most jurisdictions. You don't make a difference.

Except on your capital contribution policies, say, when people first connect up you don't make a distinction between customers and put them in different classes depending on whether I came on board in 1960 or 1965 or 1985.

MS. TAMARA MCCAFFREY: And that's still relevant today; all new consumption is regards as --

MR. WILLIAM HARPER: Yeah. I think that that's a general principle that's still applied today by most utilities I'm aware of, yeah.

MS. TAMARA MCCAFFREY: And the efficient allocation and use of resources in producing and distributing electrical energy should be encouraged.

The validity of economic efficiency advanced by witnesses for Ontario Hydro with the theoretical support for marginal cost pricing is rejected by the Board as not being a measurable, achiaveable, or valid goal for Ontario Hydro but efficiency in the technical or operating sense is a realistic objective that would minimize the unit cost of power and the rate levels?

MR. WILLIAM HARPER: Yeah. Actually this is the one where I'm not too sure if I, sort of, you know, agree that, sort of, this narrow an interpretation of efficiency is still something that perhaps, you know, more than twenty (20) years later one could -- and I -- because I think in rate design there is a growing move to looking at marginal costs when you're trying to set, say, rates for incremental consumption and, sort of, try and use interpretations of efficiency that go beyond the narrow engineering definition that's used here.

MS. TAMARA MCCAFFREY: Thank you for

that, Mr. Harper. And we'll talk a little bit about that, too, shortly.

And the final one then is rate structure should be publicly acceptable and comprehensible and should provide rate stability and should be feasible in application?

MR. WILLIAM HARPER: Yes. I think -- and, again, that's paraphrasing of various criteria of the Bonbright's put forward in his text.

MS. TAMARA MCCAFFREY: There's consensus everywhere about those principles then; right?

MR. WILLIAM HARPER: Yeah, I guess there's not necessarily consensus in terms when you come down to the fine tuning of interpreting them sometimes, like equal treatment of equals, well who are the equals, I guess, you know.

Or we have to made trade-offs between them which often arises. That's where there's not consensus, but --

MS. TAMARA MCCAFFREY: But that in no way takes away from --

MR. WILLIAM HARPER: No --

MS. TAMARA MCCAFFREY: -- the validity of those principles, they're cardinal principles?

MR. WILLIAM HARPER: Yes I think like I

said, except for the one (1) caveat I'd add about sort of the interpretation that was put around efficiency by the Board. I think the Board at that point in time, was struggling with how they saw as a practical definition of efficiency.

MS. TAMARA MCCAFFREY: Thank you.

MR. ROBERT MAYER: Do they have the same kind of validity or persuasiveness as we are told the generally accepted accounting principles have?

MR. WILLIAM HARPER: Well not in the sense that there's sort of a -- you know -- a sort of an accounting authority and I'm sorry, I can't remember the exact expression for you -- the Canadian -- you know there isn't the same sort of regulatory authority over all accounting rules, you know, over all regulatory rules.

But, I think to a large extent I think in that -- in general they do and that's to some extent why, when I was actually referring to them I didn't actually put in an excerpt from Bonbright, I put an expert from Phillips who was another author basically to try and demonstrate that a number of people do refer to these same principles and they are used very, very widely.

MR. ROBERT MAYER: The reason I asked that is, is that I asked a similar question to a doctor whose name keep escaping me and Byron keeps reminding me who he is, we met at the Clean Environment Commissions.

MR. WILLIAM HARPER: Oh, Dr. Higgin.

MR. ROBERT MAYER: Yes and discussing -- when there seems to be a definition of fairness in equity that is defined in regulatory principles, it seems to differ somewhat from what me, as a hick town country lawyer, thinks is maybe fair or maybe equitable under any circumstances.

So I'm trying to wonder how broadly accepted these are because Dr. Higgins did say, yes, there is room in some of these principles, in generally accepted regulatory principles, for terms like fairness as I understand it and equity as I understand it and public policy as we may all understand it.

MR. WILLIAM HARPER: No and I think that's fair. And that's why and I think I tried to echo a bit of that in my response to Ms. McCaffrey when I saying, even when we come down to equals, well who do we define as equals?

I may have a different definition of who I believe is equal to me, in terms of treatment from a rate perspective than you do, in terms of who you think is equal in terms of from a cost causation perspective.

And when it comes down to equity issues, I think that's where -- that's where you come into common precepts on things like no consumption is new consumption, or maybe why do you have uniform rates even?

I think that's an element of equity which some people support and other people don't. So I think you're right, you know, it's like anything, at a high level the words sound good. When you're coming to actually try to parse them and apply them, and different people read them, different people have different interpretations of how they should be applied.

That's probably different, I mean when you read accounting rules, they're probably precisely clear as to exactly how it should be applied and I don't --

MR. LEN EVANS: Just to follow up, if I might, about marginal costs. And I think there was either Ms. McCaffrey or yourself said the Ontario Energy Board rejected the use of marginal costs and said well you must use embedded costs, which I gather probably are average costs?

MR. WILLIAM HARPER: Yes average or accounting costs, that's right.

MR. LEN EVANS: Yes, this seems to me a perpetual problem in economics. You know, the theory of the firm, you maximize profits where marginal costs equals marginal revenue. That's the ideal.

The problem is, who knows what the marginal cost is?

MR. WILLIAM HARPER: Yes --

MR. LEN EVANS: And it's not only utilities but other types of industries, as well. So I guess my question is, about Manitoba Hydro in its material, I think make reference to using proxies to get to marginal costs.

And I'm not clear about what proxies we're taking about and how useful those proxies are.

MR. WILLIAM HARPER: Well, I think what -- what Manitoba Hydro was talking about was the proxy -- the fact that they were using -- specifically them, their surplus energy program rates as being a proxy for -- as being a proxy for -- for marginal costs.

Now, I believe -- and that's because I believe their marginal costing methodology itself basically -- to -- completely on the generation side determines the marginal costs based on export -- I don't want to use the opportunities because that gets mixed up with -- the definition of opportunities -- they base to a large extent on the prices they can achieve in the export market.

Because that's where the -- because that's where they can sell that additional generation that's made available if they reduce demand from domestic customers, or it's lost if they increase demand.

So -- but -- but there were some, as I said earlier, some problems with using their actual forecasts of what they deemed to be their, let's say, proper marginal costs in a rate proceeding like this because there was commercial sensitivity around how they developed the forecasts.

And so they were using the SEP rates as a proxy for those marginal costs. I don't know if that helps in understanding the difference.

MR. LEN EVANS: No, I'm not -- I'm not sure whether I can sit here and pretend I understand it all. But I think it's refreshing to hear that the OEB said that, you know, embedded costs were more reliable than marginal costs. Or at least that's what you were telling us.

THE CHAIRPERSON: I think we're citing a 1979 report; aren't we, and --

MR. WILLIAM HARPER: Yes.

THE CHAIRPERSON: -- the OEB.

MR. WILLIAM HARPER: Right. You know, and so I think, you know I think it's -- I think the issue has not been revisited since then. But like I said, I think, sort of -- and that's why to some extent I was taking some exception with the engineering inefficiency because I think to some extent thinking has evolved.

I think there still are some problems definitionally about, like you said, Mr. Evans, about how you define marginal costs and calculating them. Probably it's much easier to define and calculate accounting costs.

MR. LEN EVANS: Right. Thanks.

CONTINUED MS. TAMARA MCCAFFREY:

MS. TAMARA MCCAFFREY: On the subject of efficiency, in Manitoba the Public Utility Board has been doing things to improve the efficiency of price signals to residential customers, for example, by ordering the gradual elimination of declining block rates; are you familiar with that?

MR. WILLIAM HARPER: Yes, I am.

MS. TAMARA MCCAFFREY: By the way, you participated in this hearing in the 1970's?

MR. WILLIAM HARPER: 1970's?

MS. TAMARA MCCAFFREY: The OEB hearing?

MR. WILLIAM HARPER: No, actually I didn't. Even I was kind of young -- I was going to say, no, actually to be quite honest with you I started my career at Hydro in Power costing when they hired me to come in to figure out -- help them figure out what to do after they got the report because the report was issued in '79 and I started there in 1980.

And so, it was a matter of the group had been doing it, had been working a lot on marginal costing and then they basically had to shift gears somewhat, to some extent, and sort of start and figure out how they were going to do embedded cost of service and that was when my career started with Ontario Hydro.

MS. TAMARA MCCAFFREY: Just curious. You -- we talk about residential, improving efficiency of pricing with residential customers, you'd also agree, of course, that rates for larger customers, like industrials, can also be designed to improve the efficiency price signals on incremental load changes; right?

MR. WILLIAM HARPER: Yes, on --

MS. TAMARA MCCAFFREY: That's something you can do and --

MR. WILLIAM HARPER: You know, I guess on incremental load changes for -- for, say, an existing customer, yes. The conversation we were having earlier about new customers coming in I don't -- I'm not too sure if -- I don't believe stepped rates can address -- can specifically address that issue.

MS. TAMARA MCCAFFREY: Well, can we talk a little bit about the new British Columbia industrial rate that's charged customers on a stepped or inverted rate; were you involved with the hearing that dealt with that, sir?

MR. WILLIAM HARPER: Yes, I was.

MS. TAMARA MCCAFFREY: Is the cut off point between the lower base rate and the higher run out rate; that's called the customer baseline?

MR. WILLIAM HARPER: Yes, it is.

MS. TAMARA MCCAFFREY: And then I take it you're aware that this rate was designed to be revenue neutral; that is rates on some portion of the customers loads went up and others went down by equal amounts; is that right?

MR. WILLIAM HARPER: Yes. I think the cut off point -- they -- sort of it was a cut off point set at roughly 90 percent of the customers' baseline which is supposed to be his typical use and then the rates were designed such that for that industrial class overall you get the same revenue back as what you would have under the existing rates except you're charging a higher rate linked to the long run cost of supply for the final 10 percent of the load and a lower rate, whatever it takes to balance the revenue requirement for -- for the first 90 percent.

MS. TAMARA MCCAFFREY: And I think that the rationale for doing that was that if a customer expanded their plant so as to increase their output capacity the customer baseline would be increased so that the customer would not be penalized for its investment in the form of the higher stepped rate?

MR. WILLIAM HARPER: Right. And that's really where, you know, -- so what happens is if a customer expands his plant then basically his plant -- you know, his baseline goes up and so basically he doesn't pay that incremental rate for -- for all of his increased use.

So to some extent, you know, this maybe gets back to the discussion we were having before, Mr. Mayer, about, you know, there was a trade off there between trying to figure out how do I put in a rate that isn't going to totally shut down all economic expansion in the province and at the same point in time put in a rate that's going to signal, sort of, what's the real cost of long-term supply.

And they did this by adjusting the baseline so that customers who expanded their production wouldn't be negatively impacted.

MS. TAMARA MCCAFFREY: Thank you, Mr. Harper. You're short-circuiting my questions like crazy here. It's wonderful.

MR. WILLIAM HARPER: Well we're all interested in finishing by 3:00 so it's --

MS. TAMARA MCCAFFREY: All right. Sir, you've indicated that you support Manitoba Hydro's proposed approach to credit net export revenues to generation and transmission for some portion of exports and then for the remainder credit against all costs including distribution costs?

MR. WILLIAM HARPER: I don't believe --

MS. TAMARA MCCAFFREY: Maybe not -- you don't like the term, net export revenues. Let me put it to you again. You noted you agree with Manitoba Hydro's proposed approach to credit export revenues to generation and transmission for some portion of exports, but that for the reminder credit against all costs including distribution. Am I right?

MR. WILLIAM HARPER: I'm not sure if I'd say it that way. You know it's really a two (2) part proposal. The first part is determining the costs of exports. And you determine the costs of exports by determining the variable costs associated with opportunity exports and both variable and the fixed costs associated with -- deemed to be associated with firm exports.

Once you've identified those costs of exports, the difference between the costs and export revenues is the net export revenue that is then allocated back to customers based on their usage of generation and transmission and -- effectively all allocated assets.

MS. TAMARA MCCAFFREY: Okay. I think the result of the way I put it and you put it, I think is the same thing.

MR. WILLIAM HARPER: Same thing.

MS. TAMARA MCCAFFREY: Are you aware of any utility that credits export revenues against the distribution system, sir?

MR. WILLIAM HARPER: No, I'm not -- no I'm not.

MS. TAMARA MCCAFFREY: And you're not arguing today that there's a functional link between exports and distribution assets?

MR. WILLIAM HARPER: No, I think I'm arguing that once we get -- once we've identified what's a fair and reasonable assessment of costs against the exports, then really the net -- when you get down to that point you're dealing with the excess or the net export revenue at that point in time.

There's not much of a link to anything, except the fact that Manitoba Hydro's managed to make extra money off of exports.

MS. TAMARA MCCAFFREY: Thank you. There you go again short circuiting my questions left, right and centre here.

If you just give me a moment, please.

(BRIEF PAUSE)

THE CHAIRPERSON: While Ms. McCaffrey is doing that, I just had one (1) question. Are you are of any Canadian utility that exports -- has more higher export sales than domestic sales?

MR. WILLIAM HARPER: No I don't believe I am actually. And maybe to follow up on that a little bit, like I said the utilities I deal with primarily which you think would be hydro and exports are say BC and Hydro Quebec.

And to be quite honest with you, under median water flow conditions when they forecast their rates, BC does not have a surplus. You know, they may have surplus on an actual basis when water is good and as a result of that they can make exports.

But, they don't have -- but they don't

have surplus hydro like Manitoba Hydro currently does when they're doing forecasts going forward.

They require all their hydro plus purchases they're making from -- and contracts to meet their domestic load. So it's a little bit of a different circumstance.

And so to some extent when I was -- the question about how you treat export revenues, you know, to some extent what we've got here is a rather unique circumstances in Manitoba.

And so perhaps trying to find precedents elsewhere can be a little bit awkward.

(BRIEF PAUSE)

CONTINUED BY MS. TAMARA MCCAFFREY:

MS. TAMARA MCCAFFREY: All right then sir, with respect to the MIPUG CAC/MSOS-5(b) IR that -- I referred to it briefly earlier.

MR. WILLIAM HARPER: Yes, I've got that.

MS. TAMARA MCCAFFREY: Okay. I just want to explore your response to the question that was posed there, namely if these exports are beyond what can be credit to generation and transmission now, should they be credited to domestic ratepayers at all, versus perhaps taken away for say a government purpose or social purpose or any other use someone else might think of?

Can you expand on your answer? Look at --

MR. WILLIAM HARPER: No, I -- no -- I guess we're dealing with, you know, I'm not too sure how much I can actually expand on what I said here to the extent that my understanding is that the current framework in which Manitoba Hydro operates, and maybe this goes a little bit to the point Mr. Mayer raised with me earlier about the Act being changed to allow for exports, I think.

Part of the whole background on that on exports was exports for what reason? And it was exports for the benefit of domestic customers; that was my -- you know, it would all come back to the same thing.

And so from that perspective it's benefiting domestic customers. You know, it then feeds into -- we've got a definition, I believe in the Act, in terms of how you're supposed to come up, you know, with the revenue requirement and what costs you include in that generally in the revenue requirement from a -- you know, in terms of operating cost and appropriations from net income and if export revenues are available they're used as an offset against that.

And so I guess what I was struggling with first of all is I wasn't too sure within the current framework whether -- whether there was -- there really wasn't any hole you could, sort of, send money out from Manitoba Hydro to -- to somebody else, sort of thing, and say we're going to -- you know, it's sort of -- it's sort of within Manitoba Hydro it's going to be used to reduced their revenue requirement or what the size of that revenue requirement is is something that, sort of, Manitoba Hydro makes applications to the Public Utilities Board.

And the Public Utilities Board makes decision on that and, you know, and the level of net income is part of what's taken into account in terms of what's the level of retained earnings they want. And that all comes into the mix with -- with export revenues.

So my first part was is it seems to me we've got a construct here and I'm not too sure from Mr. Lazar's suggestion about non-utility purposes; that got that impression it was going outside the utility. I wasn't too sure, I'm not a lawyer, but I wasn't too sure in understanding the construct here whether that was actually even possible for it to go outside the utility unless there was a specific change to the Act.

So that was really my -- my first point. The second point was, was that if you decide you're going to retain it in Manitoba Hydro and keep it all for retained earnings I think, you know, Manitoba Hydro's calculation has over $200 million in net export revenues; that translates into a 20 percent rate increase all of a sudden if you decide you're going to retain all that in one (1) year.

I guess my second point was dealing with the fact I didn't think that would be an acceptable thing to have happen and, therefore, some of it has to get credited back. And, like I said already, the PUB goes through a process of deciding what level of rate increase is appropriate.

I don't know if that helps in terms of my answer but that was where it was coming from.

MS. TAMARA MCCAFFREY: So I think the two (2) points that I'd like to distill from your answer is that some of it gets credited back to domestic customers and anything beyond that threshold, if I could put it that way, you would urge would still belong within the electrical portion of the utility; again, to benefit domestic customers?

MR. WILLIAM HARPER: Yes. You know, then what you're doing is you're looking for -- again, once you've decided on net export revenues as being net of what you think is an appropriate amount to, sort of, credit against the cost of generation and transmission facilities used to support those; I think at that point in time you've addressed the cost -- you could say the cost causality associated with exports and the question of how you credit those back becomes a little -- somewhat more open.

And, as I said, I've argued, I think, crediting back just on generation and transmission is sending the wrong price signal from a cost causation perspective.

(BRIEF PAUSE)

MS. TAMARA MCCAFFREY: Mr. Harper, in some cases you would agree that other jurisdictions make efficiency in markets a primary focus of rate setting; such as in your own Province of Ontario and also in Alberta; correct?

MR. WILLIAM HARPER: You know, I'm not too sure. They have established a market in order to, sort of, provide the commodity to consumers in the province, both in Ontario and Alberta.

I'm not too sure if it's just for pricing reasons. You've got -- you know, you've used markets work in terms of establishing prices. Theoretically they work in terms of balancing supply and demand and encouraging new supplies to come on.

So I think the market structure you used goes beyond just your objective in terms of how you think rates should be set.

MS. TAMARA MCCAFFREY: It does go beyond that in terms of other considerations?

MR. WILLIAM HARPER: Yes.

MS. TAMARA MCCAFFREY: In those cases, we keep hearing that customers are exposed to efficient marginal costs for their power once it's set by the markets.

Is that -- would you agree with that?

MR. WILLIAM HARPER: Well, customers are exposed to some extent, you know, depending upon how -- how the prices are passed through -- to what extent the prices are actually passed through to customers or you have things like we have regulated price plans for smaller customers, so they don't -- aren't exposed to the volatility.

Over time they pay what it costs, but not on a month-to-month basis. But, you know, yes, customers see more directly what the cost of supply is.

MS. TAMARA MCCAFFREY: Right and in those cases, the generation of power is priced at the market clearing prices and people purchase their supply at the market based priced, am I right?

MR. WILLIAM HARPER: Yes or it's purchased for them and it's flowed through them. In the case of most small customers, it's purchased by the municipal utility who then basically flows it directly -- passes it directly through to the customers.

MS. TAMARA MCCAFFREY: And I think you've said that the market will -- they only apply to generation utilities, is that right?

MR. WILLIAM HARPER: Well, you know, the transmission and the distribution segments of the market are still fully regulated.

MS. TAMARA MCCAFFREY: And for the distribution --

MR. WILLIAM HARPER: And actually parts of the generation are still regulated as well so let's put all that stuff out there --

MS. TAMARA MCCAFFREY: For distribution utilities though, they continue to recover all their cost of service via the rates for wire service, is that right, sir?

MR. WILLIAM HARPER: That's correct.

MS. TAMARA MCCAFFREY: And you've told us that those rates are regulated?

MR. WILLIAM HARPER: That's correct.

MS. TAMARA MCCAFFREY: So if I'm a customer receiving these efficient price signals, I'm paying a market price for my generation plus paying embedded costs for my wire service; fair?

MR. WILLIAM HARPER: That's correct.

MS. TAMARA MCCAFFREY: And just to go one (1) more step, if I'm a customer in Ontario I'm also paying a debt retirement charge related to nuclear facilities; is that right?

MR. WILLIAM HARPER: Well, it's more than nuclear facilities. At the time that they did the market restructuring they looked at what the -- I think Ontario Hydro's debt ratio was in excess of 100 percent at that point in time.

So but they looked at what the -- what they thought was a reasonable commercial financial structure for each of the successor companies, the difference in debt was transferred over to the provincial government and it's held by the Ontario Electricity Finance Corporation.

And basically there's a debt retirement charge that goes in everybody's bill basically to retire that debt over time.

MS. TAMARA MCCAFFREY: So everybody pays

it?

MR. WILLIAM HARPER: Yes, that's correct.

MS. TAMARA MCCAFFREY: So ultimately then, the Ontario customers bore the risk and responsibility for Ontario Hydro's decisions to construct the facilities, is that right?

MR. WILLIAM HARPER: Yes, you know, you know you could say the Province is ensuring that electricity consumers pay for sort of the electricity costs both past and present.

MS. TAMARA MCCAFFREY: I just want to talk to you a little bit about Mr. Lazar's proposals to include CO2 emissions in the cost of service.

You're familiar with that proposal?

MR. WILLIAM HARPER: Yes I am.

MS. TAMARA MCCAFFREY: You'd agree that these are not really costs for Manitoba Hydro?

MR. WILLIAM HARPER: No, they're not -- they're not costs that Manitoba Hydro incurs.

MS. TAMARA MCCAFFREY: Have you ever seen an embedded cost of service study includes costs of this type with all your breadth and years of experience?

MR. WILLIAM HARPER: Actually, no, I haven't.

MS. TAMARA MCCAFFREY: And I take it you

wouldn't suggest that we would raise rates in Manitoba to have customers here pay for CO2 costs when they're buying hydro power?

MR. WILLIAM HARPER: I think I've already addressed that in my direct in terms of, I don't think the sort of the incremental rates for consumption should, at this point in time, include -- include externality costs.

Like I've said, I think to some extent some of those costs are actually worked through and in Manitoba Hydro's embedded revenue requirement to the extent they make decisions about which plants they're going to operate or whether they're going to purchase or operate.

And those decisions are influenced by externality considerations. They may end up having higher costs as a result of that and those costs will flow through to customers, through the rates, because they're part of the costs they're actually incurring.

MS. TAMARA MCCAFFREY: Thank you, sir. Now, getting back to your direct, back in the 1990's the issue of treatment of export revenues, I think you said that it wasn't carefully considered. Did I hear you right this morning?

MR. WILLIAM HARPER: No, I don't think I

said that. I --

MS. TAMARA MCCAFFREY: They weren't very -- I think you said something along the lines of the export revenues weren't very big back then, so they weren't really -- the allocation wasn't carefully considered?

MR. WILLIAM HARPER: You know, I think I said at the beginning, you know, it was perhaps expedient to treat them the way they were. I think towards the end of my direct -- towards the end of my direct, I was making a more general statement that said, typically when we are doing cost of service studies, sometimes you tend to focus on the big dollar items and tend to overlook sometimes the smaller dollar items, simply because they are smaller dollar items.

You know and I think -- you know, that's something actually we're finding now because distribution that was typically a very small portion of somebody's bill and so people never slooked a lot at how you allocated distribution costs because it only ended up being a smaller part of the bill when you had an integrated utility.

Now, that we've broken it all up and, like I said, we're doing these cost of service studies for distribution utilities, you know, that 15 percent is now

100 percent. So we end up -- we end up paying attention to things that we probably didn't pay attention to before.

MS. TAMARA MCCAFFREY: Which is leaving me with that impression, again, and I think I want to give you an opportunity to clear up on the record.

MR. WILLIAM HARPER: Right, no, that's fair. like I was not here in the early 1990's I think as I expressed again, I just -- it was just a comment I made that the tendency tends to be a focus on the big ticket items like whenever you're doing cost of service studies and utility, everybody talks about how you're going to allocate generation because generation ends up being -- not too many people often talk about how you're going to allocate street lights.

MS. TAMARA MCCAFFREY: You're not suggesting that export revenues were ignored though in those previous Public Utility Board decisions --

MR. WILLIAM HARPER: No --

MS. TAMARA MCCAFFREY: -- are you, sir?

MR. WILLIAM HARPER: No, I'm not. I'm just saying that sometimes -- sometimes when we're worrying about smaller dollars, how they get allocated has less of an impact and therefore, you know, decisions about how we're allocating them don't end up, you know, sort of -- giving rise to the same concern.

I think you saw that in my direct when I was talking about some of the smaller cost items be it the $5 million for the MISO and the MAPP fees in terms of how you want to treat that.

And I think Manitoba Hydro's acknowledged the same -- made the same comments with respect to some of the costs in their cost of service. It's a smaller dollar item, if I change the treatment it isn't going to have a big impact.

MS. TAMARA MCCAFFREY: I know that you weren't here in the early '90's. John Todd I think was involved. Were you familiar with the hearings that were held in 1994, for example, where the Board did hear evidence from Mr. Todd, I believe one (1) was Mr. Todd from -- where exports should be given in a greater share to distribution customers.

MR. WILLIAM HARPER: No, I'm familiar with the Board's decision, like I hadn't -- didn't go back and read the records but I've read the Board's decision, so, I'm familiar from them with the positions that were taken by the various parties.

MS. TAMARA MCCAFFREY: So you are familiar with the Board's decision though from 1994?

MR. WILLIAM HARPER: Yes, I am.

MS. TAMARA MCCAFFREY: And you are aware that back then CAC/MSOS, with the assistance of Mr. Todd, was arguing for an allocation of export revenues to distribution customers even back then?

MR. WILLIAM HARPER: Yes, I think I'm aware of that from the -- from reading the Board's report. I haven't seen Mr. Todd's -- I haven't reviewed Mr. Todd's evidence that he filed at that hearing.

MS. TAMARA MCCAFFREY: But, it would follow from that though that it was, in fact, considered even though it was small dollars?

MR. WILLIAM HARPER: No, I think that's fair, yes.

MS. TAMARA MCCAFFREY: Okay. And I take it you're also aware in 1996 that it was considered again?

MR. WILLIAM HARPER: Yes, I read the 1996 decision, as well.

MS. TAMARA MCCAFFREY: 1987/'89 I understand there was a hearing, as well, that also considered the treatment of export revenues and also the creation of an export class. I don't know if you're familiar with that, as well.

MR. WILLIAM HARPER: I don't think our records went back quite that far, to be quite honest with you.

MS. TAMARA MCCAFFREY: Okay. So notwithstanding what you said earlier about we don't tend to give the same attention to smaller dollars -- to big dollars the reality is that these specific issues have been given some consideration before?

MR. WILLIAM HARPER: Yes, I think that's fair.

MS. TAMARA MCCAFFREY: Okay. Mr. Chairman, there might be one (1) other area arising from this discussion that we've had. I am essentially very close to being finished.

I would appreciate though, if it's an opportunity to take a break now a chance to review my notes and consult with Mr. Bowman who is here providing assistance to me through this Hearing and determine if there might be one (1) or two (2) more questions. But I'm almost done.

THE CHAIRPERSON: How much time would you require to consult with Mr. Bowman?

MS. TAMARA MCCAFFREY: Just a few minutes, I'm just noticing the time --

THE CHAIRPERSON: Would ten (10) minutes be sufficient?

MS. TAMARA MCCAFFREY: Ten (10) minutes

would be fine.

THE CHAIRPERSON: Very good then.

MS. TAMARA MCCAFFREY: Thank you.

--- Upon recessing at 2:20 p.m.

--- Upon resuming at 2:33 p.m.

THE CHAIRPERSON: Okay. Welcome back. I understand there's some interest in not having the evening session. So we'll see how we make out.

Ms. McCaffrey, are you ready to resume?

MS. TAMARA MCCAFFREY: I sure am. And in the interests of doing our part towards achieving that objective, I have about four (4) questions for you. So we'll be pretty quick.

CONTINUED BY MS. TAMARA MCCAFFREY:

MS. TAMARA MCCAFFREY: You talked about the price of exports being the driver of the proposals not the volume?

MR. WILLIAM HARPER: That's correct.

MS. TAMARA MCCAFFREY: Now, Mr. Harper, you're aware that with respect to the price if we're talking here about unit price which is cents per kilowatt hour, BC and Quebec actually get much higher export prices than Manitoba Hydro; don't they?

MR. WILLIAM HARPER: I'm -- I'm not precisely aware of the prices that -- that they get, so, I can't comment on that.

MS. TAMARA MCCAFFREY: If I put to you that Hydro Quebec is, in some years, receiving on average export prices of twenty (20) cents per kilowatt hour higher, does that ring a bell for you at all? Are you familiar with that at all, as to what the --

MR. WILLIAM HARPER: No, not -- because like I said, in Quebec the generation business isn't regulated. So when I'm doing work in Quebec I'm dealing with the distribution utility and exports that's -- that's the unregulated business; that's not something that's talked about.

MS. TAMARA MCCAFFREY: So that -- that's fair. I don't want to put you in a position of commenting if you don't know what exports -- it's just in following up from the Chairman's question to you with respect to whether you were aware of other jurisdictions that were receiving these kind of export revenues.

And as I understand it, Quebec sells to New York and British Columbia sells to California and those are pretty high priced jurisdictions and I - I -- but if you're not comfortable --

MR. WILLIAM HARPER: Well --

MS. TAMARA MCCAFFREY: -- commenting on that, that's fine.

MR. WILLIAM HARPER: Well, you know. They probably are. If -- if that's the case that's, you know, in Quebec you know there is a -- there was a fixed -- you could say almost a fixed -- there was a fixed price established for heritage pool assets and whatever monies are made on the export market now are a matter between Hydro Quebec production and its shareholder.

MS. TAMARA MCCAFFREY: That's fine. I just thought you might have been aware of what those were and, again, I only bring that up in response to the comments that the Chair -- the Chairperson.

Thank you very much, sir. It's always a pleasure.

MR. WILLIAM HARPER: Thank you.

MS. TAMARA MCCAFFREY: And that completes our cross-examination.

THE CHAIRPERSON: Thank you, Ms. McCaffrey. Is Mr. Anderson here?

MR. BOB PETERS: He did e-mail me that he had no questions of Mr. Harper and I think that's his latest position. So I think we can assume that --

THE CHAIRPERSON: Okay, very good.

Professor Miller, are you happy back there or do you want to --

DR. PETER MILLER: Oh, I'm happy, yeah. And I hope to keep it fairly brief. I know it's going to be brief in any case.

(BRIEF PAUSE)

CROSS-EXAMINATION BY DR. PETER MILLER:

DR. PETER MILLER: I think in response to a comment by Mr. Evans he equated embedded and average costs and I think you said you agreed and I'm wondering how you reconciled that with an earlier remark you made that not all kilowatt hours and kilowatts are equal?

Do you recall either of those two (2) things that I'm trying to --

MR. WILLIAM HARPER: Well, I recall the first --

DR. PETER MILLER: -- join together?

MR. WILLIAM HARPER: Yeah. I recall the first one and I think it's maybe at a broad -- at a very broad basis when you're talking about setting rates and the basis on which you're setting them. I think embedded costs are usually thought of as being the accounting costs of the firm.

I think, you know, many people mistakenly, and maybe I do too, use average costs to mean the same thing. It's sort of the -- you know, and so that was the context in which I was meaning average costs as opposed to, say, marginal costs. If you want to put it that way.

And when you say average costs, I typically think of that in a sense of from an accounting perspective because that's -- that's what you're usually doing. Embedded studies based on accounting costs or average cost based studies based on accounting costs or you're doing marginal cost base studies based on marginal costs.

In terms of all kilowatt hours being -- not being equal, I guess you know that comment would apply whether -- whether you were doing a cost of service study trying to allocate embedded costs or whether you're doing a cost of service study based on avoided costs.

You know, you would still have that same issue in terms of, you know, they're not all created equal and, therefore, they're not all -- say if you're doing avoided cost or a marginal cost based study -- excuse me I mix my terms sometimes, the -- you know, all kilowatt hours don't impose the same marginal cost on the system.

Say, the curtailable rate program that

Manitoba Hydro does; if you're doing a marginal cost based study on that, you wouldn't assign a full marginal cost of generation to it because they are curtailable and they don't impose that same level of capacity requirement on the Manitoba hydro system.

DR. PETER MILLER: But surely, accounting costs or embedded costs it just depends on how you define your accounting categories? I mean, one of the proposals that's being considered is -- is Winnipeg River Generation versus Nelson River Generation based on accounting costs and so those are both embedded but different; is that not the case?

MR. WILLIAM HARPER: Oh, yes, in a sense if you're talking about, say, the vintaging alternative that was one of the four (4) alternatives that Manitoba Hydro had undertaken at the request of the Board.

There you do have -- that's right, you haven't -- you aren't allocating everything on an average basis. You split things out between, sort of, older and newer stations and older stations are assigned just to domestic customers and the newer stations are assigned to both domestic and exports.

So you have made some distinction there between the two (2) of them, so, you aren't allocating everything out on a very broad average. You're starting to, sort of, as you say, sort of, put it down into different categories.

So in that sense, it isn't an average cost method any more because you've added this vintaging. It isn't an average cost in the very broad sense of the word because you've added this vintaging to it. It's still average cost, I guess, in the sense that it's based on embedded costs as opposed to marginal costs.

DR. PETER MILLER: But, well, can't you just say it's an embedded cost method but not an average cost method?

MR. WILLIAM HARPER: Yes, and --

DR. PETER MILLER: Aren't the two (2) concepts somewhat discrete?

MR. WILLIAM HARPER: Yes. You know, if we want to define an average cost method is we're allocating the -- is we're allocating everything to everybody on the same average basis, like I say, all, then your characterization would be correct. It's an embedded cost method but it's not an average cost method.

DR. PETER MILLER: Thank you. And linked to this discussion, I'm trying to understand what is meant by the phrase "all consumption is new consumption."

Wouldn't that argue for a marginal cost approach to things?

MR. WILLIAM HARPER: Not necessarily, no, because you can apply that same principle to an embedded cost approach and I think the -- you know, the vintaging example -- the vintaging methodology would be an example where you're saying all consumption is not -- all consumption is not new consumption. Some consumption is old consumption and we're going to assign the older costs of the older plants to that.

So, I don't think that particular sort of principle necessarily automatically takes you to applying avoided costs. All it means is we're not going to -- we're not going to try and say that, you know, this part of -- you have a town. This part of town I built the distribution system twenty (20) years ago, I'm going to charge them for that portion of the distribution system based on the depreciated assets that are twenty (20) years old.

This part I have a new part of town and everybody who's moved in there, the assets are brand new, I'm going to charge them based on the fact that I've got undepreciated assets and I've just started -- I've just built those.

I'm not going to make that distinction between my customers. I'm going to treat them as if they're all new -- or they're all old. You could say it either way. You could say all customers are new customers or all customers are old customers. You're just saying, I'm not going to take vintaging into account. I'm not going to take how long they've been on the system into account.

DR. PETER MILLER: From that response it sounds like the expression should rather be all customers are old customers?

MR. WILLIAM HARPER: Well, like I say, that would be the other way of characterizing it, yeah.

DR. PETER MILLER: But the two (2) are very different because new customers impose marginal costs on the system and old customers, if they're not increasing their load, may not?

MR. WILLIAM HARPER: You know, it's just -- you know, maybe we're trying to parse the words on this expressing further than they were meant to be parsed.

DR. PETER MILLER: Well then, I'll leave it then. I want to -- I think you said that the main -- one (1) of the main purposes of costs is to fulfill the principle of fairness --

MR. WILLIAM HARPER: That's correct.

DR. PETER MILLER: -- in rates. And you also said that the revenue requirement should be based on embedded costs, I believe you -- you made that statement.

MR. WILLIAM HARPER: Well, I said that's the starting point we're given here. We have a revenue requirement that's based on embedded costs. If you're working in a jurisdiction that for some reason was basing the revenue requirement on replacement costs or basing it avoided costs, then you'd have a different starting point.

My understanding is the starting point that we have here is a revenue requirement that's defined based on embedded costs and using a forward test here.

DR. PETER MILLER: Well, that may be true but is it fair and I think that's the issue. Let me just -- I think with Mr. Williams was talking to Mr. Wiens on this issue of fairness, if I'm correct, I think he -- Mr. Wiens suggested that maybe embedded costs are not a fair way to allocate but -- because, you know, the issues that have come out that large increases in load, basically, on a cost causation standpoint raise the cost for everyone.

And that maybe a marginal cost approach would be a fairer approach. Would you comment on whether Mr. Wiens said that or not, on -- whether that type of reasoning might be true?

MR. WILLIAM HARPER: I'm not going to comment on whether or not Mr. Wiens said that or not.

But, sort of putting that aside, I think it comes down to how you want to determine the term "fairness."

I think that was one of the conversations I was having with you Mr. Mayer in terms of, you know, it's the interpretation of the word. And I think -- I think to some extent the issues you're raising about efficiency and looking forward are sort of addressed in that other rate-making principle that I talked about which was the efficiency principle.

And so, to some extent, the fairness principle looks at the apportionment of the cost that customers are actually going to pay, you know, the costs that are incurred that they're paying.

The efficiency principle starts to take into account the considerations that you've -- that you've raised about looking forward in terms of what are the going forward implications of those consumption decisions, in terms of what are costs that aren't on the books right now, but are going to arise next year or the year after that because the consumption decisions that are made because of the prices that I'm currently charging.

And those sort of are, that's -- you could interpret that as being a different definition of fairness if you wanted to. And I interpret that as being it came to the efficiency and objective of ratemaking that we talked about before.

And maybe giving it a different level of efficiency as opposed to fairness makes us realize that, to some extent, we've got two (2) objectives here and at the end of the day on rates, you're trying to design rates that address both of them, but you have to have metrics that help you understand both of them.

And I guess what I'm saying is, to some extent, the cost of service study gives you the metrics to understand the fairness aspect of rates. Avoided costs will give you the metrics or marginal costs will give you the metrics to understand the efficiency associated with rates.

And at the end of the day, you're going to have to design a set of rates that takes both those metrics into account.

DR. PETER MILLER: Well, I guess the reasoning cited is challenging that dichotomy and saying that accounting costs are the fair metric and marginal costs are the efficiency, but perhaps not as fair metric. And so you don't buy the argument that -- that on the principle not of efficiency but of fairness, marginal costs might reflect fairness in a way that embedded costs do not?

You reject that?

MR. WILLIAM HARPER: Well, again, I think it's a different definition of fairness, if you want to put it that way.

You know and it's important -- it is an important consideration. I think it's captured in the efficiency objective. I think to throw out the other objective entirely and say there only is one (1) definition of fairness and it's the efficiency objective, I think you'd be losing something in that. You'd be losing the consideration that we've got.

If I'm saying I'm going to recover -- sorry, if I'm going to recover a set level of revenue requirement from customers and I'm talking to them, I'm going to apportion that -- the costs that are actually incurred amongst them fairly it seems to me they expect you to be apportioning those costs not some -- not some other definition of costs amongst them and come up with what's a fair apportionment of that.

And to some extent cost causation is viewed as being a good way of trying to do that on a fair basis; that's one set of -- one principle we're trying to achieve. Your definition of fairness is, sort of, another principle which is the efficiency principle.

DR. PETER MILLER: Okay, to sum up then,

fairness can reflect the marginal cost determination and it's not necessarily just based on embedded accounting costs?

MR. WILLIAM HARPER: If that's how you want to define it, yes.

DR. PETER MILLER: Thank you. There's another aspect of fairness which is inter-generational fairness. Do you see embedded costs as fair to the next generation if they're not raising enough funds for a replacement of the plant or the -- is it not putting a greater debt load on the future generation then, some notion of replacement costs or something higher than historic embedded costs?

MR. WILLIAM HARPER: Like I say, two (2) comments on that. I guess the first is, is that embedded costs are based on accounting principles, and to some extent I -- you know, I'm not an accountant but one of the issues around accounting principles is in terms of, as I understand it, is how you apportion costs over time.

And it's a matter of, if I've an asset how do I apportion the cost of that asset over time and if it's got a twenty (20) year life I depreciate it over twenty (20) years so everybody that is getting the benefit of that over each of the twenty (20) years pays a portion of that.

So I -- I think to some extent embedded costs through those accounting principles are trying to address that inter-generational equity issue that you've raised. The -- I guess the second issue from an inter-generational equity perspective would be is that if this is an ongoing problem going forward then basically, yes, I will get a bit of a ride in terms of what my consumption decisions are impacting on tomorrow.

Tomorrow's customers will also get a bit of a ride because they're in. So everybody is getting -- it's fair in terms of everybody is, sort of, paying a little bit less than what they're imposing on the system. But if everybody in each generation is doing that they you could say that's fair on a going forward basis.

THE CHAIRPERSON: Mr. Harper, can you build a new hydro generation today and pay for it with rates that were based on embedded costs from a plant that was constructed fifty (50) years ago?

MR. WILLIAM HARPER: No, you couldn't. You've got the inflation costs associated with the plant. But like I said, I think the -- the issue, like I said, was you're trying to take the costs that I incurred to -- to build that plant and rather than charging them all to customers in the one year in which I put the plant in service, which would be unfair because the customers for the next thirty (30) years wouldn't be paying anything for that plant, you spread the cost of the plant over the lifetime of the plant.

But you're perfectly right, just a matter of inflation would probably suggest, you know, and hydraulic plants may be poor example, because each one's unique in terms of its location and dams etc. But I would think if I built a thermal station twenty (20) years ago I couldn't build the same thermal station today for the same costs.

THE CHAIRPERSON: Well, you just have to look at Manitoba Hydro's balance sheet. They've got 5,000 or so megawatts with assets of whatever it is, 7 billion, and Wuskwatim for 200 megawatts it's going to cost 1.2 or four (4) billion. I mean, there's a significant difference between embedded cost and new cost?

MR. WILLIAM HARPER: Yes. Yes, there is. I'm not too sure, and I apologize, I wasn't trying to make that distinction. I was trying to say -- we were talking about inter-generational equity and I was trying to make the point that to some extent embedded costs, when they're based on accounting principles are, to some extent, trying to address some inter-generational equity issues in terms of spreading the costs that we've incurred to serve customers over time.

THE CHAIRPERSON: But just to follow up on that before I lose that train of thought, there is a significant difference, isn't there, between, let's say, a utility company that its assets were all hydro-electric and built sometime ago and a utility located in another province that has gas or coal-fired generations where the load is leaping forward into building plants all the time, there'd be a significant difference in the unit embedded costs between those two (2) examples, would there not?

MR. WILLIAM HARPER: Yes, there probably would be if you're talking about, sort of, one (1) -- apart from the fact that the hydraulic stations probably cost different than the -- including the fact that, you know, they were put in service a number of years ago and therefore had a different value and if stations hadn't been built recently because they didn't have to be built, then you wouldn't have newer stations on the books at higher costs.

THE CHAIRPERSON: Professor Miller...?

DR. PETER MILLER: Thanks for that supplement.

CONTINUED BY DR. PETER MILLER:

DR. PETER MILLER: I think I have one (1) other area of questioning. And that has to do with whether CO2 costs should be reflected in rates, whether the whole rate or at the margin.

And you indicated one (1) objection I think was that you felt the determination is subjective. Is that correct, is that one (1) of your -- one (1) of the reasons why you see it as problematic?

MR. WILLIAM HARPER: I don't remember saying that actually to tell you the honest truth --

DR. PETER MILLER: Okay.

MR. WILLIAM HARPER: -- it may have been somebody else in the room that may have said that.

DR. PETER MILLER: All right.

MR. WILLIAM HARPER: I think the -- you know the main concerns I had was that in trying to, we were identifying -- over and above the costs that Manitoba Hydro actually incurred we're identifying one (1) externality here and deciding to include that. You know, one (1) externality cost.

There may a whole range of externality costs and maybe even benefits that we can't -- you know that you could conceivably think of including. And so to some extent, you know, I wasn't too sure, sort of, whether you're just picking this one (1) and including it.

The other thing had to do with the fact that if it's included in Manitoba Hydro's prices that you used, but because it's not a cost that other companies or other providers of energy or other services that customers are making choices about when you're looking at electricity, have to be included in those prices.

It creates a bit of distortion when somebody tries to look at those prices to make choices.

DR. PETER MILLER: Okay. Thanks. I'll follow up on the second one in a moment. But, dealing with the first one of the selectivity, or if not the subjectivity. Do you think that the best estimate of the combined externalities is zero, which is essentially the current practice, that is not reflecting them in rates at all?

MR. WILLIAM HARPER: No, I think there's probably some -- you know, there's some societal costs associated with CO_2. The fact that we, you know, we haven't gotten to a point in time we've been able to sort of put a price on that either, through some marketing mechanism or through some legislative mechanism.

But clearly there are some costs -- there's -- there are lots of other costs involved with, you know, from other sources from activities that we do, as well.

DR. PETER MILLER: So it might be more accurate than assigning zero to assign some positive cost to externalities?

MR. WILLIAM HARPER: Again, I come back to like you can assign a cost to it, you've -- and the purpose of that is to encourage customers to make wise choices, I presume in terms of because that's why they're looking at prices, they're looking at prices to make wise and efficient choices.

And those efficient choices would be associated with you know, if you're including externality costs, it's because you're trying to have those efficient choices taken to account externality considerations.

The concern I have with that, is the fact that I'm -- I'm arbitrarily -- I'm arbitrarily and that's the choice of word I want to use, including the price of CO2 here when it's not included in other comparable activities that the customer is going to have to make choices over because we haven't as a society made a choice either legislatively or market wise that that's a cost that people have to internalize.

And so therefore I'm concerned about what that means about in terms of the types of choices people are going to make, whether they're going to make the right choices.

The marginal cost that you look at, those are costs that in the end the company is going to incur. You know, we're talking about the private marginal costs of Manitoba Hydro and to some extent, I can see using those as a benchmark, yes. It was when it went into the externality costs and the fact that there's somewhat of a selectivity in terms of where they'd be applied and when they'd be applied that I have a problem.

DR. PETER MILLER: Okay. Thanks for that. Now, the -- I think the one (1) example that you gave of that was natural gas when you -- when you raised this earlier.

And now, natural gas in this province is regulated by the PUB and provided by the same utility -- or there's some question of whether it's the same utility or not when it comes to the Sustainable Development Act, but, so if that is the main choice between gas and electricity couldn't that be handled in this jurisdiction very handily by reflecting externalities in both?

MR. WILLIAM HARPER: You know, I think natural gas is just one place where you're making your choices.

But, you know, like I said, I think you could do it but you'd have to have a much broader consideration than just -- than just what we're doing here and I think it goes to the same comment I made about looking at all the implications of trying to implement a particular decision and making sure when you go forward you understand all the implications of that and one implication is just the choice between natural gas and electricity. There's likely to be others as well.

DR. PETER MILLER: Could you mention some of the others that you'd want to investigate?

MR. WILLIAM HARPER: Well, I think, well, you know, -- I mean, you know, there is -- I assume there's still oil heating, to some extent, in Manitoba. There's propane heating probably, to some extent, in Manitoban areas. I mean, I was just using natural gas as one -- as one energy substitute.

MR. ROBERT MAYER: Two (2) houses in Thompson left heated by oil.

DR. PETER MILLER: I believe propane is regulated by this Board; is that correct? Thank you. I guess that's my questions. Thank you very much.

THE CHAIRPERSON: Thank you, Professor Miller. Yes, it is, Ms. Ramage...?

(BRIEF PAUSE)

CROSS-EXAMINATION BY MS. PATTI RAMAGE:

MS. PATTI RAMAGE: Mr. Harper, this morning I heard you say there was two (2) key issues that you thought were the most significant in this hearing. One of them being that -- in fact, the most significant being Manitoba Hydro's recommended change to the cost of service that would have net export revenues allocated to the various customers classes based on total costs as opposed to generation and transmission as was done in the past.

You agree that is the most significant change?

MR. WILLIAM HARPER: Yes, and I think maybe it should be broader, it was the whole change in treatment of export revenues. You have a change in how you're costing them as well as a change in how you're allocating the export revenue. So it was the -- I was talking about that whole changes being the major one. And I think that's major because it's, I think as we've seen in the debate here, it's the more controversial one probably.

And from an impact perspective, I think it has much more impact on the cost of service results than, say, the change in generation classification and allocation.

MS. PATTI RAMAGE: And just to give us a bit of a foundation and not to repeat everything we've heard already, but, you indicated you support this change and could you briefly summarize your reasons for supporting the change?

MR. WILLIAM HARPER: Well, without going back through the whole --

MS. PATTI RAMAGE: Sort of a highlight.

MR. WILLIAM HARPER: At a -- at a high level again, it seems to me it addresses two (2) issues. One, there's concerns about our exports carrying a fair share of their costs and there's a methodology here to try and identify and more -- and more specifically identify the costs and allocate the costs associated with exports to them which has increased the costs attributed to exports.

The second thing is, is when we then allocated those costs and looking at the net export revenues, it -- it does a -- it allocates those net export revenues on a more neutral basis that doesn't cause the problem I see with, sort of, allocating them just on the generation and transmission in terms of -- in terms of telling customers that it's their use of generation and transmission that's creating export revenues when really the reverse is true.

MS. PATTI RAMAGE: So when you say "the reverse is true," are you -- essentially, you're going back to it's the domestic customers' use of the facilities -- rather than it's the domestic customers' use of facilities that give rise to these net exports, it's the opposite that's true?

MR. WILLIAM HARPER: You can either say -- you either say customers are either using less or Manitoba Hydro is installing more, but it's the surplus facilities there that are really giving rise to the exports.

And those surpluses either come because either you build more facilities or you encourage customers to use the existing facilities less.

MS. PATTI RAMAGE: So I think your distinction would be between function and use that use is -- use isn't what gives rise to net export revenues, rather it's the functions of generation and transmission not the use of those functions?

MR. WILLIAM HARPER: It's not the use of those functions by domestic customers that give rise to it, it's the fact that you have the surplus facilities there.

MS. PATTI RAMAGE: In Mr. Bowman's pre-filed evidence he was discussing -- oh, before I get to that question, Mr. Wiens wanted me to review something else before we get down that track.

I wanted you to imagine a situation in which everyone in this room comes to agreement, you're going to have stretch here. But, we're all going to come to agreement on what are the appropriate costs to allocate to exports. So that's not an issue, are you with me?

MR. WILLIAM HARPER: I'm with you so far, yes.

MS. PATTI RAMAGE: Okay. And once we've come to that agreement, there's going to remain a quantity of export revenue left to be allocated to the various customer classes.

And that amount would be in the range of, say, 200 to 300 million. Now, assuming that this 200 to 300 million is pure net revenue, would it be your opinion that embedded cost of service approaches or precedents bring anything principled to bear on the allocation of that 200 to 300 million among the domestic classes of service?

MR. WILLIAM HARPER: Well, you know, if I take the first part of your hypothetical which is that we've properly identified the costs associated with exports, then really you've probably addressed the cost causation principles, which is the fundamental underlying principle you're trying to achieve in your cost of service.

And so what you've got left with are dollars that, you know, there probably isn't a cost of service -- cost causation type principle you can apply to them. Probably what you'd be looking for then is, you know, I mean there's a whole bunch of secondary considerations that Bonbright has over and above you know -- something that gives stable rates, something that's transparent, something that probably doesn't confound or sort of give perverse results for the cost allocation signals you gave to begin with.

I think you'd want to take into account some of those secondary considerations. But, probably if you've allocated all of the costs properly, you're probably beyond cost causality and into other considerations when you allocate the costs.

MS. PATTI RAMAGE: Thank you. So when Mr. Bowman is discussing -- in his pre-filed evidence he was dealing with the treatment of an amount of export revenues in excess of his defined threshold, he -- during that bit in his pre-filed evidence he stated, and I'm quoting here from page 17 of the -- I don't think you need to turn to it because it's very brief, but it's page

17 of his evidence that:

"There is no principle basis to use this revenue to lower rates to any group of customer regardless of the class or economic characteristics of the customer."

And I'm wondering, in your expert opinion, is Manitoba Hydro's recommended approach any less principled than the status quo we have right now in the current approach?

MR. WILLIAM HARPER: Well, I guess the problem I have with that is we go back to your hypothetical and the status quo assumes a certain level of costs associated with exports. And we went to a hypothetical and I assume, you know, we've gone to a hypothetical -- either your hypothetical or Mr. Bowmans' threshold where we're satisfied that we appropriately attributed an appropriate level of cost to exports.

So, I have a bit of a problem with the references to the current method. Once you've, you know, once you've properly associated costs with exports, it seems to me any other net revenue you've got, like I said before, there's no -- I don't know if there is a principled way because you've addressed all the cost causality issues already and so I'm not so sure if I'd agree with Mr. Bowman.

(BRIEF PAUSE)

MS. PATTI RAMAGE: So at the end of the day, using total cost isn't any less principled than using generation and transmission, as long as you've covered your -- the initial allocation of costs?

MR. WILLIAM HARPER: No, I wouldn't think so.

MS. PATTI RAMAGE: I think you indicated in your pre-filed testimony that:

"While precedent and standards can assist costs analysts in performing the cost of service study recognition must also be given to a specific utility's circumstances."

Do you recall saying something to that effect?

MR. WILLIAM HARPER: Yes, I do.

MS. PATTI RAMAGE: And if the degree by which marginal cost exceeds embedded costs differs in any significant degree amongst customer classes, would you consider that to be a circumstance which requires recognition and perhaps something that needs to be taken into consideration in the cost of service study?

(BRIEF PAUSE)

MR. WILLIAM HARPER: In terms of the choice of methodology, I don't think so. I think the difference between marginal costs and average costs probably suggests that there are some significant, you know, -- there are significant issues or maybe this is an area where you have to pay particular concern.

But I think you should then be -- you know, having gotten your antennas up because you want to pay -- concern because of that, I think you should be going back and looking at things from a cost causation perspective when you're trying to -- when you're trying to do the allocation.

So I don't know if it helps or not but I think the difference may be, sort of, suggests to you it's an area I want to be particularly cautious with or maybe make sure I'm taking a careful look at.

(BRIEF PAUSE)

MS. PATTI RAMAGE: Would it -- would it impact or inform your choice as to how you impact pure net export revenues in that situation?

(BRIEF PAUSE)

MR. WILLIAM HARPER: It probably would in the sense that if you're beyond the point of thinking about cost causation, which is the principal objective you're dealing with here, and you're into considering well, now, I've got something else I have to deal with, then I think then you are into some of these secondary considerations, perhaps efficiency is one of those considerations.

It's a secondary consideration. But if you're into pure excess export revenues then, yes, it would because, like I said before, I think the marginal costs are probably a good metric to use from an efficiency perspective.

MS. PATTI RAMAGE: Thank you. Something else that I was reading in your pre-filed testimony was a statement you said,

"Well, it could be argued that opportunity exports are carrying less than their fair share of fixed costs relative to domestic load, the opposite argument could be made in the case of the firm export class."

Do you recall that statement?

MR. WILLIAM HARPER: Actually if you could get me on the page I can maybe see the context?

MS. PATTI RAMAGE: It's page 46.

(BRIEF PAUSE)

MR. WILLIAM HARPER: I apologize. I should have put line numbers in this so this is my fault for trying to find -- page 46?

MS. PATTI RAMAGE: It's the third paragraph, second full paragraph, on that page. Your numbering may be different than mine.

MR. BYRON WILLIAMS: Why don't we look for a footnote number or a --

MS. PATTI RAMAGE: It's above footnote -- it's immediately following footnote 130.

MR. WILLIAM HARPER: My page only had two (2) paragraphs. Okay, so immediately above footnote 130 which is immediately following -- while it could be argued that -- right. Okay. No, no. That's right. Okay. I understand the context in which I was using it now. That's fine.

CONTINUED BY MS. PATTI RAMAGE:

MS. PATTI RAMAGE: So with respect to the suggestion that an argument can be made that firm exports are carrying more than their fair share of costs, would that be because the exports don't have the same degree of firmness as domestic consumption?

MR. WILLIAM HARPER: One (1) because -- yes, one (1) because they don't have the same degree of firmness as domestic consumption.

And, two (2), because to a large extent the facilities that have been built on the system have been built primarily with -- with a domestic focus.

MS. PATTI RAMAGE: And when we talk about facilities being built with a domestic focus, we spoke this morning about the five (5) unit generating station versus the ten (10) unit generating station; those type of decisions.

You're familiar with that discussion?

MR. WILLIAM HARPER: I was here, I guess, first thing this morning when it was -- Mr. Cormie was following up on that example for Conawapa, I believe it was.

MS. PATTI RAMAGE: And are you able to provide us with any comments or can you agree that there are important domestic load considerations when determining the optimum number of units in a new generating station like Conawapa?

MR. WILLIAM HARPER: Yes, I think you know, I'm not a resource planner, but from an economic perspective it seems I can appreciate what Mr. Cormie was saying, in terms of you've got a long lifed asset here, you're trying to decide over the life of that whole asset what's the optimum way to size it, recognizing that I got both energy requirements that I have to meet on the system and capacity requirements I have to meet on the system.

And so that you know, that decision whether its five (5) or ten (10) units is a decision that's going to last for, if I heard him correctly, a hundred (100) years. So and you know a hundred (100) years probably goes well beyond the point of, you know, for most of that period of time, I would suspect you know, like in that long of time it's going to be domestic load it's going to be serving.

MS. PATTI RAMAGE: So from a economics perspective, would you agree that the opportunity sales is not going to drive your decision?

MR. WILLIAM HARPER: Well, you know, on something that long the opportunity sales is probably not going to be a key component of that relative to the hundred (100) year life of the station.

MS. PATTI RAMAGE: I want to change gears here and take about the purchase power costs. And I want to clarify just what was said this morning, to make sure we're all operating from the same --

MR. WILLIAM HARPER: Where we are --

MS. PATTI RAMAGE: -- page here. In Manitoba Hydro's recommended method 45 percent of purchase power costs are directly assigned to opportunity class, with the remaining 55 percent included in generation costs that are allocated then to large domestic customers and firm exports, that's correct?

MR. WILLIAM HARPER: That's correct.

MS. PATTI RAMAGE: And if -- I want to make sure I've got this right. In your testimony this morning you recommended purchase power be attributed 50 percent to domestic and 50 percent to exports, is that correct?

MR. WILLIAM HARPER: As your first step, that's correct.

MS. PATTI RAMAGE: Right. And then as your next step, that 50 percent that goes to domestic would go to the generation pool, is that correct?

MR. WILLIAM HARPER: That's correct.

MS. PATTI RAMAGE: And then 50 percent

that went to exports would undergo the firm opportunity split?

MR. WILLIAM HARPER: Would go through the 45/55 split and so you'd have 55 percent of that 50 percent would also go to generation to be allocated. The remaining 45 percent of that 50 percent would stay with the opportunity exports.

MS. PATTI RAMAGE: You just jumped about three (3) steps ahead of me. Good. Now, Mr. Wiens was busily working his calculator after you said that and I'm just -- I'd like to throw some numbers at you without, I just want to see if any of these numbers -- if you've run through this at all yourself, to just give an idea.

Based on -- I should back up and say there was two (2) other changes besides the purchase power costs. You also recommended some changes with respect to wind, the treatment of wind --

MR. WILLIAM HARPER: Yes, that's correct.

MS. PATTI RAMAGE: -- and the treatment of power supplies transmission. And Mr. Wiens tried to just do some quick numbers and we're just trying to make sure we're all on the same page in terms of what the impact would be.

And based on, for example, purchase power excluding wind with total costs of $48 million he calculates that the -- that under the Manitoba Hydro method 21.4 million would be attributed to domestic customers. But if he used your method that would go to 34, so an increase of 6 million to the domestics?

MR. WILLIAM HARPER: That would be on the wind side, I'm sorry --

MS. PATTI RAMAGE: I'm sorry, an increase of 13 million, sorry.

MR. WILLIAM HARPER: I'm sorry?

MS. PATTI RAMAGE: An increase of 13 million between the domestics -- between the Manitoba Hydro method and the -- and your recommendation. And I -- it's just in the order of magnitude whether you were cognizant of the impact of that recommendation?

MR. WILLIAM HARPER: You know -- actually I sat down on a broad level to try and work it through and then realized I couldn't work through the impacts on water rentals because I didn't have enough information to do so.

And so I -- and so at that point in time I must admit, no I hadn't actually worked through the -- worked through the math of it.

I was trying to actually take, what I call, as more of a principled approach in terms of how I would -- and I know Mr. Williams is going to hate me for saying that word, but principled approached to sort of working through these various issues.

But we can worth through the math and I trust Mr. Wiens calculator.

MS. PATTI RAMAGE: Well, I'm not sure that it's worth going through all the math. Mr. Wiens didn't include water rentals in his analysis but came to an ultimate conclusion that when you use those three (3) changes, domestics costs increase by $6 million, the combined; is that -- is that the sort of impact you would have expected?

MR. WILLIAM HARPER: I think that's probably about right because there's some puts and takes on the scale.

MS. PATTI RAMAGE: And firm exports increased also by about 5 million does that sound --

MR. WILLIAM HARPER: Yes, but the firm exports would go -- you know -- I guess we could say domestics -- that's right -- then the firm exports. That's domestics before you do the allocation or after you -- you know there's this issue because then the firm exports goes into the pot and gets allocated between --

MS. PATTI RAMAGE: Yes, this is just in the order of magnitude as opposed to being precise. But finally the opportunity exports would go down by 12 million does that -- in the order of magnitude, is that what you would have expected?

MR. WILLIAM HARPER: That probably sounds about right, particularly with the shift in purchase power costs and the wind power costs.

MS. PATTI RAMAGE: Leaving that, there was a discussion just this afternoon with your exchange with Ms. McCaffrey, regarding 1979 OEB, was it a OEB decision, is that correct?

MR. WILLIAM HARPER: Yes, yes it was.

MS. PATTI RAMAGE: '79 is too far for me to remember back. But one of the things I wanted to ask, is in that decision was -- when they dealt with marginal costs was that -- was their marginal costs estimates based on next plant?

MR. WILLIAM HARPER: I guess as I said, one (1) of the three (3) issues the Board had was just the methodology itself. And there were numerous methodologies put forward for how you would -- for how you would calculate marginal costs.

You know differences in system planning and next plant. So one (1) of the methodologies would include that. But this is one (1) of the things that the Board was having trouble with is there were numerous methodologies put forward, in terms of how you could actually calculate marginal costs.

MS. PATTI RAMAGE: Was one (1) of them the value of exports?

MR. WILLIAM HARPER: No, exports was -- exports was not on the radar at that point in time.

MS. PATTI RAMAGE: So you'd agree it's sort of -- it's a different world today than 1979?

MR. WILLIAM HARPER: Yes, now I think that's part of the reason why when we were going through, when I was going through the criteria, sort of those sort of criteria with Ms. McCaffrey, I sort of paused a bit when it came to the efficiency criteria and the interpretation you want to give this, because I think the analogies at that point are giving a broader interpretation of that.

MS. PATTI RAMAGE: And are you aware that there's some utilities that set rates to recover their revenue requirement but allocate their costs or that revenue requirement among classes on the basis of marginal costs?

MR. WILLIAM HARPER: I believe -- I'm sorry I just want to make sure I understand the question, they basically have an embedded cost revenue requirement but they use marginal cost of service methodology to allocate it?

MS. PATTI RAMAGE: That's correct.

MR. WILLIAM HARPER: I'm aware that there's some -- that there's some that do do that. I don't -- I don't have any particular names off the top of my head, but, there are some that do that.

MS. PATTI RAMAGE: That's all I really wanted to confirm that marginal costs have been accepted in some jurisdictions.

(BRIEF PAUSE)

MS. PATTI RAMAGE: Also during your exchange with Ms. McCaffrey you talked about risks a fair bit. And what I heard was, and correct me if I'm wrong, that most risks fall with the generation and transmission system, was that correct?

MR. WILLIAM HARPER: I think she was asking me whether the types of risks that Manitoba Hydro is exposed to, what functions they're related to.

And I thought, just from my recollection of what I remembered from the risk management study, that Manitoba Hydro had done sort of, the most -- the prominent ones seemed to be associated with sort of -- with issues dealing with the generation and transmission aspects of the business, yes.

MS. PATTI RAMAGE: So if we were to follow what I'll term sort of the strict traditional approach without applying any sort of creativity and just fall back to the approaches I think that are advocated by MIPUG, would I be right in saying then that if those risks arise out of generation and transmission they should also be functionalized to generation and transmission?

And those would be the areas that pay those costs or the costs of insurance or the contributions to net income to cover those costs?

MR. WILLIAM HARPER: Well, you know -- you know, I think so yes, and maybe to pause I think you know the issue about setting the reserves aside and you know there was discussion in the proceeding here about a rate increase that might result as a result of that.

But what dawned on me actually just before I got in the room here today was there had been no discussion about, well gee whiz, which customer, if you're going to have a rate increase at additional costs, from a cost allocation perspective, which customer classes are you going to allocate that appropriation to, which I think is the question you were asking me.

And you know -- you know and to that extent it would make sense that if you're saying I have reserves that are associated with issues of generation maybe they should be allocated to generation customers, if it's transmission, maybe it's to transmission customers.

That would be fairly consistent with sort of that issue of you know, which functions are driving the costs, yes.

MS. PATTI RAMAGE: And are you aware that Manitoba Hydro's -- any planned additions to net income is functionalized to include not only generation and transmission but the sub-transmission, distribution and customer service components?

MR. WILLIAM HARPER: I believe it's allocated on an investment basis across all those assets. So you look at the net investment, generation and transmission, sub-transmission, distribution and its allocated on that basis.

Just as -- because net incomes combined with interest costs to be the total financing costs.

MS. PATTI RAMAGE: Now I think this is my final area, and I wanted to talk a little bit about rate design.

Do you think that the concerns expressed by Manitoba Hydro regarding the gap between rates and marginal costs is a -- can be characterized as simply a rate design issue that should be able -- that can be dealt with simply by rate design?

(BRIEF PAUSE)

MR. WILLIAM HARPER: I think it's primarily a rate design issue. I'm not -- you know -- I'm not too sure whether it can all be dealt with by rate design or not. But I think that would be the first place to start would be trying to work it through from a rate design perspective.

MS. PATTI RAMAGE: I'm just going to -- Manitoba Hydro in its rebuttal evidence discussed or stated that a stepped rate intended to recover embedded costs but with the last block set at marginal costs will not influence major load expansion in Manitoba.

And I want to look at that comment of Manitoba Hydro's and get your comments. And in doing that I want to walk through just an example of a stepped rate and I'm hoping to try to emulate something close to what's going -- what was discussed as the BC -- what the BC Hydro is doing.

THE CHAIRPERSON: Ms. Ramage, just before you begin because it's 3:25 right now. I just want to -- you only have a couple of minutes?

MS. PATTI RAMAGE: I have two (2) minutes.

CONTINUED BY MS. PATTI RAMAGE:

MS. PATTI RAMAGE: For the purposes of this example, if we can assume embedded costs are at 3 cents a kilowatt hour and marginal costs are 5 cents a kilowatt hours, and we look at, as per the practice in BC a customer's past usage to establish a baseline, am I correct that the last 10 percent of usage would be charged at 5 cents a kilowatt hour?

MR. WILLIAM HARPER: That's correct.

MS. PATTI RAMAGE: But in order not to over-recover, an adjustment to the first block of energy would have to be made, is that correct?

MR. WILLIAM HARPER: That's correct, it would be reduced down so I think in your example for the average overall was .03 cents.

MS. PATTI RAMAGE: And assuming consistent usage then, 90 percent of that customer's consumption would be priced at 2.78 cents per kilowatt hour?

MR. WILLIAM HARPER: If that's how the math works out, I'll accept that.

MS. PATTI RAMAGE: It's Mr. Wiens math,

so -- so 90 percent of the consumption is then priced at below embedded costs, is that correct in --

MR. WILLIAM HARPER: That's correct. When you're doing this on an individual customer basis though, what he's seeing for any decision he's making to increase or decrease his load is that 5 cents a kilowatt hour though, yes.

MS. PATTI RAMAGE: And if a new customer comes to the Province the average price though for their consumption is still at 3 cents a kilowatt hour --

MR. WILLIAM HARPER: Yes --

MS. PATTI RAMAGE: -- that doesn't change then?

MR. WILLIAM HARPER: You're correct, if a new customer comes to the Province there's an estimate made as to what his load will be at the start, the same ninety (90) ten (10) rule applies and then basically that's sort of firmed up as experience is actually gained with the customer.

So it isn't like a new customer coming to the Province pays 5 cents for everything. No, they're paying an average of the same 3 cents.

MS. PATTI RAMAGE: And it's probably a pretty good deal at that point, would you agree?

MR. WILLIAM HARPER: Anyways --

MS. PATTI RAMAGE: Yeah. Most importantly, the stepped rate will have really no impact on a decision to locate the industry in the province in terms of discouraging or encouraging usage. The three (3) cent is -- three (3) cents a kilowatt hour price is what a customer would look at; correct?

MR. WILLIAM HARPER: That's correct.

MS. PATTI RAMAGE: And if that new customer went on to establish after -- after they move to the province a baseline and is then able to go below the -- 10 percent below their baseline, they would in fact be able to pay less than embedded costs for 100 percent of their consumption; is that correct?

MR. WILLIAM HARPER: Well, it depends on how and why he went below the baseline. The baselines are periodically reviewed and -- and revised annually actually. And it depends on how and why, if he made investments in demand-site management and he paid for them, then -- then there's certain rules about the baseline.

If he does demand-site management financed by the BC Hydro, there's a different set of rules. So it -- it doesn't -- that doesn't necessarily apply.

MS. PATTI RAMAGE: That concludes my cross-examination, Mr. Chair.

THE CHAIRPERSON: Thank you, Ms. Ramage.

Just before we adjourn for the evening, the Panel would like to assure ourselves as to our potential progress tomorrow.

So tomorrow, we would begin with Board's Counsel's cross-examination?

MR. BOB PETERS: Yes. I'll commence at nine o'clock tomorrow morning and I don't expect I'll be more than forty-five (45) minutes.

(BRIEF PAUSE)

THE CHAIRPERSON: And then, Professor Miller, Mr. Lazar is ready to go?

DR. PETER MILLER: Yes. He's getting in at 11:30 tonight, we'll have breakfast together and I'll try to update him. And he's scheduled to catch a 5:30 flight out so.

THE CHAIRPERSON: If necessary, we will have to shorten the lunch period. We'll see how it goes.

DR. PETER MILLER: Yeah.

THE CHAIRPERSON: Mr. Peters, do you see any difficulty with this?

MR. BOB PETERS: Not so far. Not based on the estimates that I've heard from the parties, I think we can accommodate that.

THE CHAIRPERSON: Mr. Williams...?

MR. BYRON WILLIAMS: No. Just we certainly, if it would accommodate Mr. Lazar's schedule, we could defer until later in the day if that would assist in -- in any way, just to make sure that he gets out on time, and then bring on Mr. Harper.

And I think we're certainly able to sit in the evening tomorrow too. So I'm just --

MR. WILLIAM HARPER: I'm here for the next two (2) days, so I'm at your disposal, whenever --

MR. BYRON WILLIAMS: So I'm just trying to, in terms of accommodating Mr. Lazar's schedule, we could certainly do our best.

THE CHAIRPERSON: Tomorrow we're open. Tomorrow -- or today we're open, tomorrow we're not, at night. That's our difficulty.

But, Mr. Peters, you think we should be all right with this?

MR. BOB PETERS: I do.

THE CHAIRPERSON: All right then. We stand adjourned. We'll see you tomorrow at 9:00.

MR. ROBERT MAYER: And I'm here Saturday and Sunday in case anybody really wants to work.

MR. BYRON WILLIAMS: We'll be working on

closing, unfortunately.

--- Upon adjourning at 3:30 p.m.

Certified Correct,

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Ryan Pickering