New Brunswick Board of Commissioners of Public Utilities

Hearing June 4th 2001
Delta Hotel, Saint John, N.B.

IN THE MATTER OF a generic hearing to establish the need for and the evidence to be provided in connection with any specific hearing held to review the maintenance or upgrading of a generating facility of New Brunswick Power Corporation

Henneberry Reporting Service

INDEX



Undertakings:

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| CHAIRMAN: | David C. Nicholson, Q.C. |
| COMMISSIONERS: | Robert Richardson<br>Jacques A. Dumont<br>R. J. Lutes<br>Emilien LeBreton |
| BOARD COUNSEL | Peter MacNutt, Q.C. |
| BOARD ADVISOR: | M. Douglas Goss |
| BOARD SECRETARY | Lorraine Légère |

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CHAIRMAN: Good morning, ladies and gentlemen. This is a public hearing in reference to three generic questions that are set forth in the notice of calling the hearing.

I forget the date of our prehearing conference. But anyhow we adjourned until today's date. There are a number of housekeeping items that I would like to cover before we call for appearances.

As a result of the prehearing conference, there was a letter sent out by the Board Secretary on the 27th of April covering a number of procedural points leading up to

and including the hearing itself.

And one matter I wanted just to make sure everybody had was the copy of the exhibit marking system in connection with this hearing.

Board counsel and Mr. Hashey for the applicant sat down and devised the scheme which pretty much follows what the Board has done in the past.

Is there anybody who didn't get a copy of that? Okay. So in that regard we have already premarked certain exhibits.

And for your records they are for NB Power, Exhibit 1 is the prefiled evidence dated April 2, 2001. Exhibit 2 is proof of publication of the notices, et cetera of NB Power. NBP-3 are responses to interrogatories, volume number 1. And those are the large volumes that we have behind us here. NBP-4 are responses to supplementary interrogs number 2.

So those are the four that I have that have already been premarked. And it would be -- if we follow through on the scheme that has been devised by Board counsel and counsel for the applicant, we will continue marking them.

And if in fact you wish to put in an exhibit then you should provide or check with the Secretary to get the required number of additional copies, and one for the Board that is, and one for each participant.

And you should provide the exhibit to the other

parties as far in advance of when you wish to have them introduced as you can, so that they can take a look at them and decide whether or not they have any objections to their introduction. That will speed up the hearing itself.

Now as far as order of cross examination we will follow an alphabetical order. And just so you know where you stand, first cross examiner would be Conservation Council of New Brunswick, second the Canadian Manufacturers and Exporters. Third would be Department of Natural Resources and Energy. (4) Enbridge Gas New Brunswick. (4) Emera Incorporated. (6) Rodney J. Gillis. (7) Irving Oil Limited and then J.D. Irving, Limited, Nova Scotia Power Incorporated, Saint John Citizens Coalition for Clean Air, Saint John Energy and West Coast Power Inc.

Board counsel will be the last to examine to complete the record. And participants should note that Dr. Kenneth Sollows has withdrawn his intervention in these proceedings.

When you do cross examine we would ask you to come to the mike on the right front of the hearing room, or as I view the T.V. screen, my left front. And there is an open table there for you.

For argument and summation, that will be after the

close of the evidence following the completion of all

cross examination. And again the participant will address the Board in alphabetical order which I have just outlined.

All of you are formal Intervenors. There are no informal Intervenors as far as the record is concerned. Therefore we will not have a time set when you can just simply make a statement to the Board. If any of the Intervenors in fact just wish to make a statement to the Board they can do that at the time of summation.

The record indicates that nobody is considering calling any witnesses other than the applicant. And therefore you don't have to file any c.v.'s because you are not requesting an expert be confirmed for you.

Transcripts and exhibit lists, participants seeking copies of each day's transcript and exhibit lists make their own arrangements with the shorthand reporter.

And speaking of the shorthand reporter, she has again asked me to bring to your attention that when you speak from the table where you are seated now would you please identify yourself so that she can accurately record that on the record.

And when you are doing your cross examination, when you do take the table to start cross examining witnesses, again identify yourself, but once you have done that from that table you don't have to do it again.

Those are all the housekeeping items I have. So now I will ask for appearances. Conservation Council of New Brunswick?

MR. COON: David Coon and David Thompson here today.

CHAIRMAN: Thank you. Canadian Manufacturers and Exporters? Not represented.

Department of Natural Resources and Energy?

MR. HYSLOP: Yes, Mr. Chairman and Commissioners. Peter Hyslop. Appearing with me is Donald Barnett and Marion Rigby.

CHAIRMAN: Enbridge Gas New Brunswick? Not represented.

Emera Incorporated?

MR. BLAMIRE: Kerry Blamire.

CHAIRMAN: Sorry. Would you use the mike, sir?

MR. BLAMIRE: Kerry Blamire.

CHAIRMAN: Is Mr. Gillis here?

MS. WOOD: Shelley Wood on behalf of Rodney J. Gillis.

CHAIRMAN: Irving Oil Limited?

MR. EARLE: Brian Earle.

CHAIRMAN: J.D. Irving, Limited?

MR. WOLFE: Wayne Wolfe and Bill Dever.

CHAIRMAN: The applicant NB Power?

MR. HASHEY: Yes, Mr. Nicholson. David Hashey as counsel. To my left Kim Little. Co-counsel Terry Morrison. Further to my left Bill Marshall and Stewart MacPherson.

Behind me Margaret Tracey, Darrell Bishop, Navin Bhutani and Mr. Larlee.

Most of the participants here will be -- Neil Larlee, he is with NB Power, not confused with Mr. Larlee, his brother who is one of my partners.

CHAIRMAN: Thank you, Mr. Hashey. Nova Scotia Power Incorporated?

MR. WALLACE: William Wallace, Nova Scotia Power.

CHAIRMAN: Did the mike pick that up, I wonder? Yes. Okay. Thank you, Mr. Wallace.

There is no need to stand when you address the Board, particularly with the mike situation.

And Saint John Citizens Coalition for Clean Air? Mr. Dalzell is not here.

Saint John Energy?

MS. COUGHLAN: Jennifer Coughlan.

CHAIRMAN: West Coast Power Inc.? Not represented.

And Board staff?

MR. MACNUTT: Peter MacNutt on behalf of the Board, Mr. Chairman.

CHAIRMAN: Good. Thank you.

Now are there any preliminary motions?

MR. HASHEY: Mr. Chairman, I would like to make an opening statement which I believe would result in a motion concerning the procedural matters as to how we feel that

we could expedite the hearing and do it in a way that would be most convenient to the Board and I think everyone else concerned.

Would this be the appropriate time to do that?

CHAIRMAN: Yes. Anything you can do to expedite the hearing, I'm prepared to hear, Mr. Hashey.

MR. HASHEY: Okay. Well, I will make the statement which is something I have discussed the generalities of this with Mr. MacNutt.

We have before us three questions. The first, is it reasonable to believe that NB Power will require the electricity presently generated by Coleson Cove and/or Point Lepreau or replacement facilities in the future?

The second is what are the relevant issues to be reviewed during any subsequent specific generating facility upgrading and/or maintenance hearing?

And the third is what is the nature and scope of the evidence that NB Power should provide for these hearings?

It is our wish and intention that NB Power will initially deal with question 1. A panel consisted of Stewart MacPherson, William Marshall and Navin Bhutani will be available to discuss this issue.

As you know, Mr. Chairman and Board members, the evidence of these gentlemen has been presented before you as exhibit 1.

Mr. Bhutani -- I'm sorry, at the commencement of the hearing, Mr. MacPherson -- we would like Mr. MacPherson to give an overview on why NB Power believes that the electricity generated by Coleson Cove and Point Lepreau will be necessary to serve New Brunswick customers in the future.

Mr. Bhutani will then outline the methodology used in relation to load forecast issues. Mr. Marshall will follow with the methodology used in relation to load resource issues.

There will not be new evidence introduced, it will be a summary of what is before you. This is where we will be using the slides. And we will following this have a handout for everyone of those slides for future reference.

Prior to the discussion with the panel on question 1 NB Power will distribute an outline of what they believe the relevant issues as stated in question 2 and the nature and scope of evidence as stated in question 3 should be.

That will be a short outline. The intention would be that people would have that outline and would have an opportunity to review it prior to the panel taking place on those two questions. And it would be a summary of really what is before you but hopefully we will make it simpler.

Following the completion of the questioning on

question 1, original panels 2 and 3 will be joined with the addition of Mr. MacPherson, so that the issues raised by questions 2 and 3 can be thoroughly canvassed.

At the commencement of this panel, Mr. Marshall and Mr. Little will speak to the summary of the discussions on question 2 and 3, the summary that I indicated that we would hand out.

If it meets the convenience of the Board we would suggest that the cross examination of the first panel be restricted to the first issue so as not to confuse the matters and discussion.

I really see these as two separate issues. One is do we need the electricity? And secondly if we are going to go with a future hearing what should be discussed and what is the evidence, et cetera as outlined.

The evidence that NB Power has filed, together with the additional evidence that may arise during the course of the hearing should enable the Public Utilities Board to issue its decision on the three questions raised above.

The summaries that will be presented should simplify some of the issues that must be considered and allow the Board to make a positive answer to question 1.

The outline delivered should focus the discussion on questions 2 and 3. It should help the Board in defining the nature and scope of the relevant issues and evidence

to be presented at the subsequent hearings dealing with the refurbishment of Coleson Cove and Point Lepreau or whatever alternates.

I think at this point, Mr. Chairman, that is my preliminary statement. I would like to move that the hearings proceed in the matter as I have outlined.

CHAIRMAN: Mr. Hashey, will it cause any consternation if I were to ask you to distribute those two outlines or brief descriptions to the Intervenors before they have an opportunity to speak to your motion, just to give them a further idea of what it is you are attempting to do here?

MR. HASHEY: Oh, I would be happy to do that. I would also be happy to distribute the comments that I have just made.

CHAIRMAN: Yes.

MR. HASHEY: So that you can follow or read what I have said, if I have gone too quickly.

CHAIRMAN: I think we will do that before I call on the participants to give their response. So if you wouldn't mind. Has everybody had an opportunity to read through the documents that Mr. Hashey has handed out? Okay.

Mr. Hashey, it looks from my perspective good but I would like to hear from the other parties. One thing about what you did say in your statement and it is on the second page, "If it meets the convenience of the Board, we would suggest that cross examination of the first panel be

restricted to the first issue so as not to confuse the matters under discussion." And that certainly is fine.

The one thing I would say that if there are questions put to that first, or in fact the second panel, in the same way, that the NB Power witnesses should perhaps indicate that, the second panel is a better panel to ask this question of.

And I just want to emphasis one thing, this is, as we know, not a court of law and it is an administrative tribunal, and what we are attempting to do is to get on the public record the best information that we can, so that for instance the first panel stands down and there is a second panel that says look that should have been put to the first panel, why the Board will bend over backwards and if that panel is still available we will try and get the answer on the record, but --

MR. HASHEY: That panel will still be available. Really there is -- what will happen between panels one and two is that Mr. Little would join the panel, Mr. Bhutani would step down and Mr. Bishop and Mr. Dalton would join that second panel, so there would be people present throughout --

CHAIRMAN: Okay.

MR. HASHEY: -- that could address that. That is a fair comment.

CHAIRMAN: Yes. Thank you, Mr. Hashey. Now would the Intervenors have any comment on what -- the motion that Mr. Hashey has just put to the Board? The Conservation Council of New Brunswick?

MR. COON: Mr. Chairman, it is just a procedural question. If the Applicant is going to give some kind of oral presentation and there is what would seem to be new or different information from the pre-filed evidence, can we refer to that in our cross examination?

CHAIRMAN: Of course you can.

MR. COON: Thank you.

CHAIRMAN: Yes. So you -- with that question answered, you have no problem with Mr. Hashey proceeding in the way he wanted?

MR. COON: That's fine.

CHAIRMAN: The Department of Natural Resources and Energy? Don't stand up, Mr. Hyslop, the mike won't pick it up as well.

MR. HYSLOP: Sorry, Mr. Chairman.

CHAIRMAN: Long habits are hard to break, I know.

MR. HYSLOP: That's correct. Mr. Chairman, our concern would be that any of the opening statements, the transcripts of them be made available as soon as possible in order that they can be reviewed. Other than that we are satisfied with the procedures that Mr. Hashey is

outlining to the Board.

CHAIRMAN: Fine. My understanding is that they will be available first thing tomorrow morning. Can the shorthand reporter confirm that they will be -- the transcript will be available first thing tomorrow morning?

REPORTER: Yes.

CHAIRMAN: Yes.

MR. HYSLOP: Mr. Chairman, I would wonder if there are hard copy statements being used for the presentations that are being given today, and if so, can they be distributed perhaps during a recess or over the lunch hour in order that we may get them as soon as possible?

CHAIRMAN: Mr. Hashey?

MR. HASHEY: Yes, Mr. Chairman, members, we are presenting a series of slides so that people can follow them. And it was my intention that at the completion of the presentation we would hand out a hard copy of the slides that have been presented, which is the outline and really is exactly what is being said.

Now if you want that done earlier we will obviously --

CHAIRMAN: Yes, I --

MR. HASHEY: -- meet your convenience.

CHAIRMAN: -- if I were in Mr. Hyslop's shoes, I think I would like to have the copies so that when the presentation is being made I can jot down my comments in

reference to that presentation. That might be helpful, might it not, Mr. Hyslop?

MR. HYSLOP: Yes, it would, Mr. Chairman. Thank you.

CHAIRMAN: So maybe you would --

MR. HASHEY: We will have those out in advance of the presentation.

CHAIRMAN: Great. Thanks.

MR. HASHEY: Mr. Chairman, could I make one comment?

CHAIRMAN: Yes.

MR. HASHEY: Really, the green page that you have is the summary of Mr. MacPherson's address and the other -- the slide presentation, the prime speakers to that would be Mr. Bhutani and Mr. Marshall. And we will have copies for everyone of what appears on that screen and we will hand that out in advance. And in giving that, would that --

CHAIRMAN: Yes, I think that would be helpful, yes.

MR. HASHEY: Yes.

CHAIRMAN: Emera Incorporated, any comments?

MR. BLAMIRE: No comment.

CHAIRMAN: Mr. -- does -- would Shelley Wood like to say something on behalf of Mr. Gillis?

MS. WOOD: Nothing.

CHAIRMAN: Irving Oil?

MR. EARLE: No comment.

CHAIRMAN: Thank you. J.D. Irving Limited?

MR. WOLFE: We have no problem with that proposal.

CHAIRMAN: Fine. Nova Scotia Power?

MR. WALLACE: We are in agreement with the proposed procedure.

CHAIRMAN: Okay. Saint John Energy?

MS. COUGHLAN: No, no comment at this time.

CHAIRMAN: Okay. Mr. MacNutt?

MR. MACNUTT: Nothing to add, Mr. Chairman.

CHAIRMAN: Fine. All right. Then let's proceed that way, Mr. Hashey.

Now are there any other preliminary motions?

MR. HYSLOP: Mr. Chairman, Peter Hyslop. We would ask that -- if the opening statement of Mr. Hashey and the four page -- the green sheet and subsequent sheets be entered as an exhibit as part of the record making them NB Power 5 and 6.

CHAIRMAN: Do you object to that, Mr. Hashey?

MR. HASHEY: No, I have no problem with that.

CHAIRMAN: Okay. Mr. Hashey's opening statement then will be NP -- excuse me, NBP-5. And the four-page document headed on the top of page 1, question 1, requirement Coleson Cove, Point Lepreau Capacity, question mark, is NBP-6.

Okay. Any other preliminary matters? If not, call your first panel, Mr. Hashey.

MR. HASHEY: Thank you, Mr. Chairman. While the panel comes to the dias, or whatever we call the table, I would --

CHAIRMAN: The witness table.

MR. HASHEY: The witness table, thank you. Now I know what term -- we will distribute these documents at the same time and make sure everybody has copies of those. Thank you.

Then I would call Mr. MacPherson, Mr. Bhutani and Mr. Marshall, please, to take their place.

CHAIRMAN: This 14 page document which appears to be the copies of the slides be given exhibit number NBP-7, right now.

MR. HASHEY: That's fine, sir.

CHAIRMAN: Any objection? Please go ahead. The record shows that the witnesses have been sworn.

STEWART MACPHERSON, NAVIL BHUTANI and BILL MARSHALL, having been duly sworn, testified as follows:

MR. HASHEY: Thank you, Mr. Chairman. I would ask then that Mr. MacPherson, who has been sworn, give his opening remarks.

MR. MACPHERSON: Mr. Chairman, Members of the Board, Ladies and Gentlemen, NB Power had made application for this generic hearing to address three questions. Is it reasonable to believe that NB Power will require the electricity presenting generated by Coleson Cove and/or

Point Lepreau or replacement facilities in the future? The second question, what are the relevant issues to be reviewed during any subsequent specific generating facility upgrading and/or maintenance hearing? Thirdly, what is the nature and scope of the evidence that NB Power should provide for these hearings?

NB Power has produced extensive evidence in respect of all three questions. Interrogatories from board staff and advisors and those from intervenors have helped to clarify the evidence and their expectations of the issues to be addressed at a project specific hearing.

I am sure we will further understand these expectations as we proceed with the hearing itself. It is my belief that NB Power has conclusively demonstrated that it will require the electricity currently produced by Coleson Cove and/or Point Lepreau or replacement facilities in future.

NB Power has an ongoing obligation to serve electricity as a unique commodity that cannot be stored. At every instant in time supply must equal the collective demand of all customers connected to the network.

Adequate reserve generation must always be available to meet unexpected demand or the expected loss of the supply that occurs when a power plant shuts down or transmission facilities fail.

In planning to meet the electrical needs of New Brunswickers we look at three main objectives. (1) providing a reliable supply of energy, (2) meeting environmental requirements, and (3) achieving the lowest cost of energy. Forecasting electrical energy demand far into the future is a significant challenge.

Over the last decade the growth in electrical demand in North America has been slowing. Most jurisdictions enjoyed surpluses of generating capacity during the period.

Today the growth forecasts are greatly reduced but the supply situation is much tighter, imbalances are more common, and this has led to dramatically higher prices in many markets that have deregulated.

Uncertainties related to deregulation have delayed the construction of much needed generating capacity in some parts of the continent. Failure to have adequate electrical energy supply can have dire consequences as we have seen in the case of California.

NB Power has very little extra generating capacity today. Neither do any neighboring utilities. Fortunately, the utility is expecting essentially zero or low growth as a result of natural gas penetration, self-generation by industry and energy efficiency initiatives.

If this forecast is right NB Power should have

adequate energy supply so long as it refurbishes or replaces Coleson Cove and Point Lepreau.

We believe that the balance of probabilities is that electrical demand will turn out to be higher than we are forecasting. Natural gas penetration may be slower than the aggressive pace that we have assumed. If natural gas prices remain high, self-generation by industry may not occur. Industrial loads may increase beyond the outlook due to potential projects being considered. We will continue to assess these risk.

NB Power has the second most electrically intensive economy among Canadian provinces. We cannot afford to run short of supply.

This panel deals with question number 1. NB Power's interpretation of this questions is, is the capacity of Coleson Cove and/or Point Lepreau or replacement facilities required for NB Power to meet its planning and operational objectives. We believe the answer to this question has been shown by the evidence to be yes, and we respectfully ask the Board to so find.

For purposes of greater clarity as to what NB Power would like to have agreed by the Board, at this hearing I would like to offer four specific recommendations.

For any Coleson Cove or Point Lepreau refurbishment hearing initiated in the next 12 months, NB Power requests

that the Board approve that: (1) the NB Power load forecast be accepted as reasonable. The utility will present sensitivity analyses related to the load forecast in any project specific hearing for the purpose of assessing the proposed refurbishment project and the supply alternatives. The sensitivities will not be offered for the purpose of revisiting question number 1.

Number (2) the NB Power load and resources review be accepted as reasonable. (3) Coleson Cove, Point Lepreau and/or replacement supply capacity be -- are required to provide a reliable supply of electricity for New Brunswick.

Fourth and lastly, because the load forecast already makes aggressive provision for demand reduction measures, NB Power need only examine supply side options to any proposed refurbishment project for Coleson Cove and/or Point Lepreau. Thank you.

MR. HASHEY: Thank you, Mr. MacPherson. I would suggest that the questions be at the conclusion of this, and then we can go on with all questions, is that fair, Mr. Chairman?

CHAIRMAN: Yes, go ahead.

MR. HASHEY: Thank you. Then I would ask Mr. Bhutani to make his opening remarks.

MR. BHUTANI: Good morning, Mr. Chairman, members of the

Board, ladies and gentlemen.

I would like to summarize the load forecast and the results of the load forecast.

The first thing I would like to talk about is the methodology, then the processes that we use in the load forecast, the key issues that came up during the interrogatories and the results of the forecast.

The forecast methodology, Mr. Chairman, could be summarized very briefly. It's a cause and effect analysis of past loads combined with data that we gathered through customer surveys and an assessment of economic, demographic, technological factors that affect the utilization of electricity.

In terms of forecast processes we used customer surveys, we used end use models, we used econometric models or economic models and we have a fair amount of consultation and discussion with our customers.

As a result of interrogatories that are asked by the Intervenors, we felt that the two key issues raised were the impacts of natural gas and self-generation. So I would like to briefly address those two key issues here, Mr. Chairman.

For natural gas the load forecast that we have presented before this Board assumes that all three laterals under consideration will be built, that is, the

northeast lateral, the northwest lateral and the southern lateral. And we have also assumed aggressive penetration levels, even higher than those that were filed by the gas distributor, Enbridge Gas New Brunswick.

For self-generation the forecast allows for 150 megawatts, which is more than 20 percent of the industrial load to be displaced by self-generation, and it also -- I would just like to make a point. If natural gas prices do not drop significantly self-generalization may not materialize.

The results of the forecast, Mr. Chairman, the latest load forecast have essentially zero growth over the next ten years. Moderate growth is expected after the ten years.

I thought I would just put the results in picture form, Mr. Chairman, the two graphs I am going to present.

The first one is annual energy supply. It shows the history of the load growth and the forecast. The forecast on the right-hand side, the lower line is the forecast that NB Power is putting forward. The red line on top is the forecast that we would expect if there was no natural gas penetration, if there was no self-generation, and if the measure for energy efficiency in the forecast were not included in the forecast.

So what we are looking at is a forecast of zero growth

and that growth would be 1.7 percent per year if natural gas and self-generation and energy efficiency measures did not materialize as we have forecast.

The next graph is essentially the same idea for peak hour demand instead of energy supply, and the results are almost similar.

In conclusion, Mr. Chairman, I would like to point out that forecasts from the early 80s were low, forecasts that we prepared back in the early 80s, forecasts prepared back in the early 90s were high. Factors that I think would make this forecast low are the fact that natural gas impacts may be smaller, the self-generation may not materialize and that industrial additions could result -- could exceed the results that we have in the model.

Factors that could make this forecast high is if we have a severe economic slow-down or self-generation becomes very inexpensive.

That, Mr. Chairman, are my remarks for the load forecast.

MR. HASHEY: Thank you.

CHAIRMAN: I just have one quick question on your graphs. 00 is of course the year 2000 and the line is today? The vertical line is today on the graph?

MR. BHUTANI: Sorry, Mr. Chairman.

CHAIRMAN: The vertical line to the right of 00 --

MR. BHUTANI: Yes, that is today.

CHAIRMAN: That is today.

MR. BHUTANI: That is 00/01, fiscal year ending in March 2001.

CHAIRMAN: Okay. Thank you, Mr. Bhutani.

MR. HASHEY: Thank you, Mr. Chairman. I then ask Mr. Marshall to give his opening remarks, please.

MR. MARSHALL: Yes. I would like to speak to the load and resources review.

First of all the load and resources review is a methodology to compare resource requirements with available resources, and it provides a measure for reliability of supply to the system. And actually it's the planning supply adequacy measure to determine adequate supply of capacity for the future.

The resource requirement is a sum of three components. First, the forecast in-province firm load, which is the annual peak hourly load which is forecast to occur in January. And it's this total annual peak less the non-firm industrial loads, which is the firm load that is required for capacity.

The second component is external sale commitments, and these are contracted external sale commitments. Targeted potential sales are only included as a sensitivity and are not a portion of the base requirement for resources.

The third component is a reserve margin to provide for supply reliability, and the reserve margin utilized by NB Power is the larger of 20 percent of the in-province firm load obligation -- and I might note that firm load obligation is the total firm load plus 20 percent of the 150 megawatts of self-generation. The reason for this is that NB Power still will have the obligation to provide for back-up supply for that self-generation. And it's the larger of the 20 percent or the largest single capacity resource on the system.

Currently that largest resource is Point Lepreau and it's the net capacity of Point Lepreau on which New Brunswick relies, which is the 635 minus the 30 megawatts sold to Maritime Electric. So 605 megawatts is the New Brunswick portion.

The available resources to compare with the resource requirement are existing system units until their retirement date. Where there are specific retirement dates like Point Lepreau, targeted for 2006, either a refurbishment or retirement date. All other units are assumed at a 40 year life.

In addition resources are capacity purchase contracts from in-province and external sources.

And the review provides an annual capacity surplus or deficit, and the results that resources are sufficient

until the 2006 date when Lepreau either has to be re-tubed or replaced, and the deficiency in 2008 is forecast to be 415 megawatts.

In the chart which is provided -- it is somewhat busy, but it provides a pictorial view of the resources and the load requirement. The standing bars are the resource requirement, the sum of the load and the reserve requirements. At the bottom of the bars are the firm contract obligations external to New Brunswick. You can see the colour, the light blue, is the Hydro Quebec/Milbank contract, the participation sales to Maritime Electric are in red and in yellow are system sales to neighbouring utilities. So those are all contracted export obligations.

The white bar on the top would be the in-province firm load requirement, and the very light baby blue on the top of the bars would be the targeted sales, and as I said, those are really only as a sensitivity. Those are sales that we are currently making but you can see in 2002, 2003 the yellow sales on the bottom go down to zero in 2004. Those are because external contracts terminate in the next couple of years. It would be our intention to attempt to supply those contracts in the future, but they are not committed at this time, so they are only included as a sensitivity.

The resources available are the solid line running across the top of the graph. You can see the step changes down the stairs are when units are retired. Courtenay Bay Number 2 in 2002, Grand Lake 8 in 2004 and the major step down is the Point Lepreau unit in 2006.

And that summarizes my presentation. Thank you.

MR. HASHEY: Thank you, Mr. Marshall. Mr. Chairman, there is an issue that we would like to clarify. If we could do it at this time I think it would be convenient, and then we would be open for the panel to be questioned.

I would like to address two questions, first of all to Mr. Bhutani, then a follow-up to Mr. Marshall. Really what we are pointing out is that there -- and what will be pointed out is that there is a small clerical error in relation to load forecast calculations. This happens --

CHAIRMAN: Mr. Hashey, I had a note to ask the panel if they wanted to correct any of their pre-trial testimony. So --

MR. HASHEY: Well that's exactly what we are coming to now. Maybe we could just ask Mr. Bhutani and Mr. Marshall to address that issue and then we can provide the information.

CHAIRMAN: Go ahead.

MR. HASHEY: Mr. Bhutani, I would like you to address -- I understand there is a small clerical error in relation to load forecast. I would like, if you would, could you

explain it, and then indicate if this really is material in any way to your conclusions.

MR. BHUTANI: Thank you, Mr. Hashey. Mr. Chairman, we discovered a clerical error in the spreadsheets which has the impact of the load forecast that we presented before this Board to be 72 gigawatt-hours out of 15,300 or so, being 72 gigawatt-hours higher. And it's 23 megawatts higher than what -- what has been presented is 23 megawatts higher than it should be.

I regret the error, Mr. Chairman. We have made corrections and we have prepared copies of the material that can be distributed to show the corrections.

CHAIRMAN: All right. Go ahead and distribute those copies. What page are we dealing with and what --

MR. HASHEY: Maybe we can distribute them and then Mr. Marshall can explain where they fit in and how it affects -- whether it has any impact on his load forecast.

MR. MARSHALL: Yes. Because of the change in the load forecast it would carry through to affect the load resource balance as well.

And in the handouts that are being given out the correction would occur on page 15 of my evidence at line 5, the capacity shortfall in 2007 would be changed from 304 megawatts to 313. And in Appendix B the handouts will have complete replacement of Appendix B except for the

last page. And where there is a change, all of the changes are shaded in grey so that you can see any changed number will be -- is highlighted so that it's clear that that's where the change occurs.

There will be changes to the load forecast numbers on page 30, changes to the tables on page 33 and 35 and the graph on page 34.

I might add that in the presentation that I just made, the final number of the presentation given as a surplus --

CHAIRMAN: Mr. Marshall, I am going to interrupt you for a second. Mr. Hashey, I am getting a little bit mixed up. There is too much paper floating around here.

What I will request of you, sir, is that you -- we go back to Mr. Bhutani and he point us to the right page in -- I presume it's your exhibit number -- well the pre-filed evidence, it's in that, is it not, Mr. Bhutani? Refer the hearing to what pages should be changed in that and complete your changes before we go to Mr. Marshall, and then you can repeat what you have done, Mr. Marshall.

For instance, I have got a response to an interrog. put on my desk from -- put by the Conservation Council to NB Power, number 25. So deal first with the pre-filed evidence if you would, Mr. Bhutani, and then go to the response to that question of the Conservation Council.

MR. BHUTANI: Yes, Mr. Chairman. I apologize for the

confusion.

First of all in the pre-filed evidence the change is on page 39, there are two changes and they are marked with grey shaded areas, and page 40 of the --

CHAIRMAN: Hang on. 39?

MR. BHUTANI: And 40, Mr. Chairman.

CHAIRMAN: 39 and 40. Are there pages being handed out covering those changes or --

MR. BHUTANI: They will be handed out if they have not, Mr. Chairman.

MR. MACNUTT: What pages of which exhibit are those corrections to?

CHAIRMAN: It's the pre-filed evidence, Mr. MacNutt, and it's the direct evidence of Mr. Bhutani which is page 39. And that's the bottom right-hand corner number, and I want to congratulate NB Power on putting in a sequential numbering system. It has made our task easier.

Well I don't have a page up here, replacement on that.

MR. BHUTANI: Mr. Chairman, just for clarification, we put everything in the one package because it's all in pre-filed evidence.

If I could just continue for a second, sir. The changes are on the pre-filed evidence for the load forecast we felt it was easier to change the whole document and shade the areas that have changed. So you

see it's an awfully thick package but the changes are few and far between, and we thought you might want to replace pages 43 to 87 because that is the load forecast document. Those have been attached in the handout just given to you. And --

CHAIRMAN: Sorry. What I have here is that I have a change in Mr. Marshall's direct evidence at page 15, and I will put that off to the side for a sec. And then we get the load and resources review.

MR. BHUTANI: Page 35, Mr. Chairman, from 28 to 35.

CHAIRMAN: Okay. So pages 28 through 87?

MR. BHUTANI: Pages 28 to 35 are from Mr. Marshall's evidence, load and resource balance. And then following that is page 39 and 40 which relate to my direct evidence.

CHAIRMAN: Okay. All right. And then there is the corrected response to Conservation Council's question of NB Power interrogatory number 25, is that correct?

MR. BLAMIRE: That is correct, Mr. Chairman.

CHAIRMAN: And the last document you want us to replace is page 15 of the direct evidence of Mr. Marshall. Is that correct, Mr. Marshall?

MR. MARSHALL: It would be a replacement to page 15 of the direct evidence and a replacement to pages 28, 29, 30, 31, 32, 33, 34 and 35 of appendix B.

CHAIRMAN: Okay. Thank you. I think I have got that

straight now. Which volume of the interrogs is 25? It is in volume 1?

MR. BHUTANI: It is volume 1, Mr. Chairman.

CHAIRMAN: Volume 1 of the interrogs. Good. Okay.

Mr. Hashey?

MR. HASHEY: I was going to ask the witnesses, Mr. Chairman, if these changes in any way affect the evidence that they have given in any material manner?

MR. BHUTANI: Mr. Chairman, in terms of energy supply it is less than one-half percent. By the tenth year of the forecast the effect is less than even that, in the earlier years of the forecast. In terms of demand it is also less than 1 percent, somewhere between half and 1 percent.

I don't believe it changes the evidence in any way, Mr. Chairman.

MR. HASHEY: Mr. Marshall?

MR. MARSHALL: I would agree that the change is about 10 megawatts in total demand requirement which is within a reasonable error expected in the forecast.

I would like to make one other clarification in my direct evidence. On page 13, line 20, it said there that I had been scheduled to appear before the Regie in Quebec in April of 2001. I would just like to clarify that I have appeared there and testified there in May of this year.

CHAIRMAN: All right. I want to make an important point on that. And that is that your prefiled evidence is as of the date that you deliver it.

Otherwise we can get into a scenario later on where every day you would be required to update your evidence. And that is a no-winner for everybody, frankly.

Anything else, Mr. Hashey?

MR. HASHEY: No, Mr. Chairman. That does complete the preliminary remarks.

MR. MACNUTT: Mr. Chairman, it is my understanding that you are not going to mark those pages as exhibits. They are simply to be substituted for the original pages.

CHAIRMAN: That is certainly the way I was going to proceed, Mr. MacNutt.

MR. MACNUTT: Thank you. In view of the fact that the changes do run throughout the NB-1, and all of us haven't had a chance to update our pages and substitute and consider the impact of the changes, notwithstanding the witnesses' comments that they are insubstantial, I think we still -- the participants should have time to examine the changes in a context in which they are made and so on.

And I would suggest perhaps that we might take a break now, so we can update our books, consider the changes before we embark upon the examination of this panel.

CHAIRMAN: That is precisely what I was about to do,

Mr. MacNutt. Thank you for laying the groundwork. And we will take a 10 minute.

But I would ask everybody here that just -- let Board counsel know when you have had an opportunity to review it. And we will wait until you have had that opportunity. Then we will come back in.

And it is the Board's intention then to sit until 12:30 when we break for lunch. Thank you.

(Recess)

MR. MACNUTT: Mr. Chairman, just before we get underway again, Board staff have asked me to request of NB Power that they identify for us when they found out these corrections were required, how did they find out and an expression of their confidence in the accuracy and correctness of the whole or the balance of the exhibit NB-1, NB Power 1.

MR. HASHEY: Thank you, Mr. Chairman. I can say -- I could make an opening comment on that then and refer to Mr. Bhutani. We have had some discussion on the importance of accuracy of numbers and in cross examination, et cetera. So a review was conducted of the numbers.

Mr. Bhutani I think will indicate that late Wednesday night he was informed that an error had been located by some of the people that had done some of the underlying calculations. He can speak to it directly.

It was brought to my attention for the first time Thursday. And on Friday and over the weekend these documents that have been presented to you were prepared. So it was truly a last-minute thing. It was not something that we hid from anybody whatsoever.

Mr. Bhutani, maybe you would like to add to that, some of those questions of Mr. MacNutt's?

MR. BHUTANI: First of all, Mr. Chairman, what Mr. Hashey said is correct. The way we found out about it is while preparing for the cross examination I had asked the staff to look into some of the details behind the gas impacts. And the numbers didn't really add up when I calculated them.

So I asked him to look into it a little further. And late Wednesday night about 5:00 o'clock or so, Mr. Larlee came in and explained to me that one piece of the calculation had been done instead of using the cumulative column they had used the individual year column. And that is what caused the error.

So for example, the effect was 13 gigawatt hours in year 5. But the cumulative effect by that time was 40 gigawatt hours. And that subtracted 13 instead of 40. By the end of the forecast year the effect was 66. But it only subtracted 4 in the forecast because they used the wrong column.

CHAIRMAN: What is your level of confidence, Mr. Bhutani, as to the other -- the rest of the evidence or the calculations, et cetera?

MR. BHUTANI: I'm quite confident, Mr. Chairman, that the evidence is good as it stands. Again I regret this small error that slipped through the cracks. But I'm quite confident the evidence is good.

CHAIRMAN: Thank you, Mr. Bhutani. Is that sufficient, Mr. MacNutt?

MR. MACNUTT: Yes, Mr. Chairman. Thank you.

CHAIRMAN: Thank you. Go ahead, Mr. Hashey.

MR. HASHEY: I believe at this stage, Mr. Chairman, that the cross examination of the panel can take place. There is no preliminary further matters.

CHAIRMAN: Thank you. Conservation Council --

MR. MACNUTT: Mr. Chairman, perhaps an item. It is your practice --

CHAIRMAN: The panel has difficulty hearing you, Mr. MacNutt. That is just to record. It is not a PA mike, as I understand.

MR. MACNUTT: I'm sorry. Has the panel been sworn?

CHAIRMAN: Oh, yes. Conservation Council, if you would like to come up and take that table. And I was remiss in not suggesting that over the break. So take your time and come on up.

CROSS EXAMINATION BY MR. COON:

Q.1 - Mr. Chairman and members of the Board, gentlemen, I would like to start I guess with -- just go through the panel's evidence as prefiled in that order.

A number of areas we would like to cross examine on. I would like to begin with Mr. MacPherson's evidence, question 4 concerning NB Power's mandate.

CHAIRMAN: Mr. Coon, it is sometimes helpful for the Board if you could just make sure that on the record you are referring to NB Power 1, which is prefiled I guess, and then what consecutive page number it might be.

And that is the number down on the bottom right-hand corner. It enables the Board to get right to the point that you are going to be examining on.

Q.2 - Thank you, Mr. Chairman. So it is NB Power 1, page 8.

As I understand from reading the evidence, the Electric Power Act contains NB Power's mandate. And it seems to have a two-part mandate, first to provide for the continuous supply of energy adequate for the needs and future development of the province, the first part, and to promote economy and efficiency in a generation distribution supply sale and use of power.

Is that -- am I correct, Mr. MacPherson, there is parts of the mandate that are separate?

MR. MACPHERSON: That is correct.

Q.3 - Thank you. And in your evidence you say the statute places a clear obligation -- again, sorry, NB Power 1, page 8 -- places a clear obligation with the utility to supply the electrical needs of the province.

Now in the mandate it says that the mandate is to provide for the continuous supply of energy adequate for the needs. Below that you say the statute places a clear obligation on the utility to supply the electrical needs.

Our question to you is does the provision of the continuous supply of energy as outlined in the mandate necessarily mean NB Power has an obligation to supply those electrical needs entirely from its own power plants?

MR. MACPHERSON: There is nothing to indicate that it has to be supplied from facilities that are owned by NB Power. That is correct.

Q.4 - Thank you. With reference to the second part of the mandate in NB Power 1, page 8 which is, to paraphrase, to promote economy and efficiency in the generation, distribution, supply and sale and use of power, does this then -- does the statute then not place a clear obligation on the utility as well to promote efficiency in the generation and use of power?

MR. MACPHERSON: This part of the mandate puts an obligation on NB Power to promote economy and efficiency. So you

have to take into consideration both the terms economy and efficiency when you are considering the mandate of NB Power.

And economy, from our point of view, does come first in terms of trying to meet the needs of the customers in the province in an economical fashion. However the additional requirement on us is to do it as efficiently as we can. That is correct.

Q.5 - Thank you. So I guess the question related to that then is would the successful promotion of efficiency in the generation and use of power have some bearing on NB Power's generation needs in the future?

MR. MACPHERSON: I'm not quite sure that I understood that question. Maybe you could just rephrase it for me?

Q.6 - Well, it would seem that as part of its mandate, if NB Power is to promote the efficiency and the generation and use of power, that obligation could have some impact on the -- as it was carried out, the load forecast over the 10 year period we are dealing with here?

MR. MACPHERSON: That is correct.

Q.7 - So that raises the question then, because it is not clear in the evidence here, how NB Power plans to carry out its mandate with respect to promoting efficiency over the forecast period?

MR. MACPHERSON: When we look at the requirement to supply a

reliable -- to provide a reliable supply to the people within the province of New Brunswick, we look at it from the point of view of the economics.

As we said in the -- as I tried to indicate in the initial presentation, opening comments, we have three key drivers within the utility that we use.

First off is providing reliable supply to the customers. Secondly is meeting the environmental requirements that we have within the province, not only meeting them, but we consider anticipating future requirements as being important for us. And lastly to minimize the cost of providing that energy to our customers. That is really what drives us.

And as implementing areas of efficiency can help us with respect to meeting our environmental requirements, and as well providing low-cost power to our consumers, those are the opportunities that we try to take advantage of.

Q.8 - You have in your answer you agreed -- in the previous answer you agreed that the second part of your mandate involved promoting efficiency.

But it is not evident in those three drivers which is labeled was it NB Power 5 or 6 that you presented this morning?

MR. MACPHERSON: Our view is that as efficiency impacts the

meeting of our environmental requirements and meeting a requirement to provide low-cost stable rates for our consumers, those efficiency initiatives are what we definitely take into consideration.

And it is not only on the generation side of our business, but also in the distribution and transmission areas, whereby as an example things like losses are important in terms of being able to operate a more efficient system.

And when you are talking about generation, we try to operate our generating facilities as efficiently as we can in terms of how we load them and how we dispatch them.

Q.9 - I'm interested in over the forecast period how NB Power will evaluate its success in delivering on the second part of its mandate and promoting efficiency in the generation and use of power, what sorts of measures and criteria you will use to determine whether you are achieving this objective?

MR. MACPHERSON: As we have indicated in our load forecast and also in our responses to interrogatories, the main issue that tends to come to the fore here is what is the benefit and what is the use of natural gas going to be within the province of New Brunswick?

And it has end use opportunities which can deliver on this concept of improved efficiency or increased

efficiency. And that is not -- when we look at efficiency, we look at it not only from the point of view of energy input versus energy output, but also we look at it based on the emissions and the impact on the environment of the use of that energy.

And as we have said, and as the provincial energy policy is taking steps in that area, is fuel substitution towards natural gas is an important part of that.

Q.10 - So if I'm clear on what you are saying, you don't have any measures by which you evaluate your success in carrying out that second part of your mandate to promote efficiency and use?

MR. MACPHERSON: That is not what I said. I think the issue that we are trying to -- the issue with respect to that is the level to which fuel substitution, and that is at the end use level, can impact that area.

We have taken a very aggressive forecast in that regard in terms of, as Mr. Bhutani indicated this morning, in terms of the level of penetration that we see for natural gas in the residential and commercial sectors in the province. That is also an issue taken within the provincial government energy policy.

And we see that delivering on that is going to be a prime requirement in order to deliver on some of these efficiency areas with respect to not only the use of

energy, but also the environmental impacts as a result of that.

Q.11 - So I ask a final question on this area. And that is are there measures by which NB Power will evaluate its success in promoting efficiency as in terms of achieving the second part of its mandate?

MR. MACPHERSON: The second part of our mandate, as I indicated initially, deals with both economy and efficiency.

We see from an economy point of view that if we can deliver low cost stable rates, which our plan indicates that we can over the 10 year term under which we are doing our present analysis, if we can deliver low cost stable rates over that period, we feel that we can deliver on the whole issue of economy.

The second issue within that second part of that mandate is one dealing with efficiency. And with respect to the efficiency, as it translates into the use of fuel and as it translates into the impact on the environment, we see -- and we have taken considerable cognizance of that -- we see that the fuel substitution program which has been identified within the energy policy being a major part of that.

And if we are to maintain, as we have indicated, a zero growth in energy over that period, then that part of

the program is going to be really -- very vital to that.

MR. THOMPSON: Dave Thompson, Conservation Council. Regarding the efficiency of the use of the power, what specific programs do you have now to bring that about? What specific programs does NB Power have that are currently in place?

MR. MACPHERSON: With respect to the specific programs, we have advisors, energy advisors around the province that are advising our customers in this area with respect to efficiency, with respect to heating systems, water heating systems, with respect to appliances and those particular areas.

Education is the main impetus that we have with respect to trying to deal with the efficiency on the end use side.

MR. THOMPSON: Could you give us an indication of the -- I guess the size or the scope of those programs, and, you know, perhaps the -- some general information maybe on the number of employees or budget of that program?

MR. MACPHERSON: I can't give it to you right now, but I could get it for you.

MR. THOMPSON: Thank you. Also in respect to these programs, what user groups are they targeted at? Are there targets other than residential?

MR. MACPHERSON: Target base generally residential general

service and small industrial categories.

MR. THOMPSON: What -- I guess the thing -- the question I have here is that across the border in the case of many utilities and their areas of jurisdiction, there have been significant programs to curtail demand for new generating facilities.

And have any of your programs been successful in curtailing that demand, or I guess what I am asking, have any of them been successful in curtailing that demand over the last few years?

MR. MACPHERSON: Just to clarify here, and I am going to ask Mr. Marshall to respond to that specific part of the question, initially you asked what were we actually doing today and now you are referring to what we have actually done in the past and what the impact of that was.

So I will ask Mr. Marshall to comment on that because some of the past programs are a little different than what they are today. And he can identify -- you are never quite sure 100 percent what the impact is, but he can give you some idea what he feels it is.

MR. MARSHALL: Really one of the past programs, the R2000 program that NB Power spearheaded with the Builders Association in the province and we funded was I think instrumental in changing and improving the overall standards of building and house construction in the

province. And we undertook that through the early 90s up to '96, I believe.

Also the success of that is that all new houses that have been built have required lower and lower amounts of energy. And as I think Mr. Bhutani can talk to in terms of the amount of energy per household to -- for heating, as used in the load forecast, this is a significant part of why the load forecasts that he has presented have been decreasing over time from the early 90s to the late 90s.

I think if you go back to our integrated resource plan back in '95, which we produced, the forecast that it was based on is a '93 forecast. And the load forecast at that time for this current year would have been about 3,300 megawatts. We have experienced 2,980, I believe, somewhere in that range. So that the current load this winter was about 300 megawatts less than what was forecast at that time.

How much of that we can say is definitively attributable to our programs that we put in place, it's difficult to say. But a significant amount of it we think is attributable to programs that we put in place at that time and changes that have been through education and our customers' responses to use of energy.

MR. THOMPSON: You mention the program in the context of the program of that time. Is this program still in place? Is

it still active at the previous funding and staffing levels?

MR. MARSHALL: No.

MR. THOMPSON: What is the rationale for that program not continuing, or is it continuing at any level?

MR. MARSHALL: The R2000 program was funded by NB Power for a number of years in order to get it in place up to that point and the funding was budgeted for a number of years and then to be phased out. And the program has since been phased out and is run by the Homeowners Association -- Homebuilbers Association.

MR. THOMPSON: Are you familiar with the revised program or the program now that is run with the Builders Association?

MR. MARSHALL: Personally, no.

MR. THOMPSON: Thank you.

Q.12 - Thank you. I would like to move on now to page 10 of exhibit 1. A couple of questions concerning question 7 on page 10. The question was, Under current or anticipated market conditions are there strong economic incentives for customers to want to purchase energy supplies from parties other than NB Power or to want to invest in self-generation. The short answer to both parts was no.

I just have two questions here. One has to do with availability. You say that there are really two issues

concerning the ability of your customers to purchase energy from other parties or to self-generate, price and availability.

With respect to availability, I am wondering whether the recent announcements would have any impact on that availability. I am speaking about the Atlantic Partners proposal to build the Neptune electric power transmission network.

MR. MACPHERSON: That project, although its primary objective is to get energy at the peak time of the year into markets that are in the northeast of the U.S. which have difficulty meeting their capacity requirements -- that is the primary objective.

However, if the total project was to be built, we would anticipate some opportunities to be able to purchase energy from a supply point of view. In other words, we anticipate that there would be some supplies available that we could purchase if the full system was to be constructed, yes.

Q.13 - In terms of capacity, can you give us a sense of what kind of capacity to bring electricity in might be available?

MR. MACPHERSON: The -- as that project is currently filed with the Federal Regulatory Commission in the U.S. it is a 4,800 megawatt project. To put that in context, the total

load in New Brunswick, as Mr. Marshall just indicated, the total firm load is a little less that 3,000 megawatts. So it's -- the total project is slightly -- is about 50 percent greater, shall we say, than the total load in New Brunswick.

The link between New Brunswick -- or into New Brunswick off that system is about 1,200 megawatts, which would be about 40 percent of the total load requirement in the province. Or in another context, it is approximately the capacity, let's say, of the existing Coleson Cove unit. A little bit more than that.

Q.14 - So if that goes ahead, the limits on availability that your evidence suggested would be diminished?

MR. MACPHERSON: If that goes ahead, it would provide additional -- ability to bring in additional supplies certainly at certain times of the year, that's correct.

Q.15 - Thank you. The other issue, you say, that affect the ability of your customers to purchase energy from other parties is price.

Are there incentives -- in your analysis are there incentives other than economic for your current customers to want to purchase power from another party or self-generate?

MR. MACPHERSON: That is two questions. In terms of the incentives to want to purchase from other suppliers,

generally our major customers are the ones that are -- the market will be open to in April of 2003, generally they are driven by economics and so we don't see a big opportunity there to purchase from -- a big driver there to purchase from outside the province.

However, the second part of your question, which is self-generation, each customer has their specific requirements in that regard and it generally is indicated -- dictated by the type of fuel they have available to them and the level of efficiency that they can generate from their particular generating facility. And that is can they provide co-generation where they can utilize steam in their process and utilize electricity.

And the third part of that is for their economics can they sell off any excess generation at a profit to somebody else.

So on the one hand there may be economics for self-generation depending upon the particular situation that some of our major customers could find themselves in. As far as just simply buying from other -- someone other than NB Power, we don't see the economic incentive there right at the present time to do that.

Q.16 - So in your opinion then there are no other incentives besides the economic ones that they might -- that might compel them?

MR. MACPHERSON: Are you referring now to purchasing from outside utilities?

Q.17 - Either. Both.

MR. MACPHERSON: Well as I say, there could be incentives for them to self-generate, based on their operation, based on their requirement for steam, based on the type of fuel that they may have available to them and -- so the economics in that regard there very well could be.

With respect to simply buying -- as an example, the City of Saint John, who will have the ability to buy energy from suppliers other than NB Power in April of 2003, my guess would be that it would be a financial or an economic decision that would drive that, and even based on the fact that within the energy policy, any contract that results in subsequent rates for the customers within that territory have to come before this Board, so my view is it would be driven by the economics of it.

We don't see an economic supplier supplying customers in New Brunswick at market based rates when NB Power is continuing to be obligated to supply customers in the province at cost based rates.

Q.18 - Thank you, Mr. MacPherson. I would like to move on to -- in NB Power 1 now. Let's see, it would be page 11, and question 9, and the question was, The energy policy proposes examination of how residential electricity

is priced and of ways to encourage use of natural gas. Could these initiatives significantly reduce NB Power's load forecast?

This deals with residential electricity pricing. My question is with respect to pricing for industrial customers, and that is what kinds of impact would the elimination of say the declining block rates for industrial customers have on NB Power's load forecast?

MR. MACPHERSON: The current industrial rates do not have a great declining block incentive and I will ask Mr. Bhutani to reflect on this question based on his experience in the rates area and also with the load forecast.

MR. BHUTANI: Mr. Coon, the declining block rates that you are talking about and industrial rate, is supposed to disappear on October 1st. It will have a minimal impact on the large industrial customers' overall bill or the rates that are being charged.

I can say without hesitation that I don't expect that to have any impact whatsoever on the load forecast requirements of the industrial loads.

Q.19 - Thank you, Mr. Bhutani. One other question on this matter, and that is this issue of significance, significantly impacting the load forecast, what -- this comes up a number of times and I am wondering if you could give us a sense of what would constitute a significant

impact? I mean what magnitude of impact do you consider significance to start to come into play?

MR. MACPHERSON: Are you talking now with respect to price?

Q.20 - With respect to load forecast. What impact on load forecast would you -- what magnitude of impact on the load forecast would be considered significant?

MR. MACPHERSON: We responded in one of the interrogatories to that that we felt it was within -- anything over five percent was what we would consider to be significant.

Q.21 - Five percent of the overall load forecast. Thank you.

On the same page of NB Power 1 with respect to question 10 which has to do with how the forecast would be impacted by the proposal to allow wholesale and industrial transmission customers to purchase from non-NB Power generation sources. You say that some customers may have different criteria for competitive supply and may leave the system, but you don't expect this to significantly impact on load forecast.

What kinds of different criteria might some wholesale or industrial customers have that would motivate them to leave the system? Would you elaborate a little bit?

MR. MACPHERSON: The characteristics of loads of all of our customers, they do vary. And as an example let's -- the energy policy envisages generation being built in New

Brunswick and being built for self-generation as an example.

If that ended up with excess generation, which in all probability it could by virtue of the fact it's difficult to match the generating facility precisely to the load that it's serving, there could be excess generation as a result of that that could be looking for a market to serve.

And when you get into constrained markets -- and I mean constrained by virtue of the fact that that generation may not be able to get outside of the province to serve other markets because some of the transmission systems would not be able to accommodate it -- there could be opportunities or there could be someone trying to take advantage of selling that energy within the province.

That's -- really that's sort of what that is trying to imply, is that we don't want to leave the impression that we fully understand all the dynamics in this area because in any particular situation it could be different.

And you may get the situation where someone -- a generator in New Brunswick would be prepared to supply load in New Brunswick by virtue of the fact that is the only market that they have available to them.

Q.22 - And that load in New Brunswick that they might supply would be what classes of your customers?

MR. MACPHERSON: Well the only customers that would -- the current energy policy only envisages that on April of 2003 the only customers that would be able to take advantage of alternate suppliers would be transmission customers which are large industrials and wholesale customers. So it would be that class of customers.

Q.23 - Now with respect to constraints to supplying outside the New Brunswick market, I thought you had said that one -- well if the Neptune project goes ahead that a considerable amount of new transmission capacity would come on line and presumably that would eliminate those constraints?

MR. MACPHERSON: That's correct. We presently -- and it was identified in the evidence -- that we have been working on two transmission projects which would expand the transmission capacity from New Brunswick into some of these markets, and also expand the ability for generation from those markets to come into New Brunswick, and that is the second tie which basically intersects our transmission system at Lepreau and is an overland base route down into the Bangor area. And the second as you refer to as the Neptune project, which is an undersea cable from -- basically from intersecting our transmission system at the Coleson Cove area and down to markets in New York.

Q.24 - So those constraints within the forecast period

we are talking about will be removed?

MR. MACPHERSON: Those are projects in the initial phase. There is no guarantee those projects will be built.

The second tie, the overland route, has been filed with the National Energy Board and it has to go through a hearing process and there is a number of issues obviously, hurdles, that have to be overcome there before that line gets built.

And the undersea cable is just in the preliminary stages and an open season will be held on that beginning in September, and it will be definitely contingent upon customers contracting for capacity on that undersea cable that will indicate whether or not it will get built.

So those are not -- those are not absolute projects that will be built as yet.

Q.25 - The overland route to which you have referred to that has been applied to the National Energy Board, what is the capacity on that?

MR. MACPHERSON: We anticipate that the capacity will be an additional 300 megawatts going north to south, in other words from New Brunswick into New England, and we would probably anticipate a 400 megawatt capacity from south to north.

In other words 400 megawatts of capacity would be able to come out of New England to New Brunswick, where today

it is virtually zero in terms of the capacity that can come from New England to New Brunswick on the existing line.

Q.26 - Thank you. Now if we can move to -- well I guess this remains in question 10. The last paragraph of page 11 you say, NB Power's generation costs are expected to remain competitive compared to other regional suppliers.

Can you explain how NB Power's generation costs would compare -- what you would expect them to compare to Hydro Quebec's as another regional supplier?

MR. MACPHERSON: It's -- if you are talking about cost base -- first off we should differentiate in terms of how markets in New Brunswick would be supplied, or we would feel they would be supplied.

The energy policy of -- or the white paper on energy policy -- requires NB Power to continue to supply all customers in the province that want to stay with us on cost based rates.

Hydro Quebec has made it well known to us and to others that they -- all the energy that they will be selling will be at market based rates which are considerably higher than cost based rates today.

So we see that our generation costs -- we will continue to remain competitive with the market based rates that we see all around us.

Q.27 - Okay. It was some ambiguity then perhaps we are dealing with here. You are not suggesting NB Power's generation costs are expected to remain competitive with the generation costs of say Hydro Quebec?

MR. MACPHERSON: No. And we -- there was an interrogatory that we responded to as well in that regard which really -- what we are trying to say here is that with respect to regional suppliers, in other words, the price that they are prepared to supply our region at, we feel that our generation will be competitive.

Q.28 - Thank you. Now if we can move to page 12 of NB Power 1, question 11 which was how current and stated environmental standards impact NB Power's plans to refurbish generating facilities.

You say that plans for refurbishment will include current and stated environmental standards. Canada ratified the UN Climate Change Convention some years ago. It came into effect in 1994. And it signed a protocol to that convention which requires a 6 percent reduction in greenhouse gas emissions over 1990 levels by the end of the decade.

So in a sense that is likely to become a standard in New Brunswick. Governments allocate the 6 percent target on a provincial basis or a sectoral basis, how might that impact on NB Power's plans to refurbish generating

facilities?

MR. MACPHERSON: The target being taken by the Canadian government with respect to this can -- obviously it can have an impact on NB Power, depending upon how it is going to be implemented.

The current thinking that we are trying to promote is to try and allow existing plant to go to its end of life after which, as we state in our evidence, and is supported by Canadian Electrical Association, after which a standard would be implemented which would be a combined cycle natural gas standard, which is approximately half of the CO2 emissions per unit of output of a coal-fired plant.

As well we are trying to promote the concept of a trading system, since this whole issue of climate change is a global issue, we are trying to promote a trading system which allows -- would allow us to take advantage of the lowest cost options that we could take advantage of in order to be able to meet some of these targets.

But if the standards or if the implementation became very targeted at specific facilities having to meet specific standards, then obviously it could have severe impacts on any fossil fuel-burning power plant.

But we don't anticipate that that is a mechanism that will be used in order to be able to achieve these targets. We anticipate there will be trading opportunities for

trading credits.

We also anticipate there will be opportunities to be able to generate credits in other areas by investing in lower cost solutions than some of the localized options that we have available to us in terms of, as an example, replacing some of our fossil-fired generation with as an example, nuclear generation which has zero CO2 emissions.

We see that there are other options that will be available to us. And as we state in our evidence, those are the ones that we would hope to be able to take advantage of.

Q.29 - Thank you very much, Mr. MacPherson. I would like to move on now to the evidence in NB-1 that Mr. Marshall had presented.

On page 15 of NB Power 1, question 7, the question of the result of the current load and resources review was posed. And the response, current load and resources review based solely on existing and committed resources for their project lives indicates a shortfall in capacity beginning in 2007 of 304 megawatts as of 2007, according to the corrections made today.

I would say there are a lot of efforts that could have an impact on this, the planned energy efficiency strategy by the Province for example, and many others.

I guess with respect to energy efficiency, it wasn't

clear exactly -- maybe perhaps it was just a translation problem, it was in gigawatt hours or something -- how much of a load in megawatts would be displaced by the expected efficiency improvements over the load forecast period.

There is a factor in a load forecast for efficiency. I think it was expressed as gigawatt hours. I couldn't find it exactly expressed in terms of what megawatts of capacity would that effectively displaced.

MR. MARSHALL: I think Mr. Bhutani would be able to answer the question more specifically on the load forecast.

MR. BHUTANI: Mr. Coon, I probably cannot give you an exact number right now. But I can give you an approximate number.

Q.30 - Approximate is fine.

MR. BHUTANI: If I may just refer back to the interrogatory that you are alluding to. Do you have the reference to the interrogatory where we gave the gigawatt hour numbers?

Q.31 - Yes. Are you going to direct me to it?

MR. BHUTANI: Yes. Do you have reference to it so I can -- I just want to be able to translate that gigawatt hours into megawatts.

Q.32 - Yes.

CHAIRMAN: Is it CCNB 28, Mr. Coon? I hear the panel talking from over there. Check that out and see if it is the right one.

Q.33 - CCNB 28. I have 390 gigawatt hours from the residential and general service sector response to CCNB 22.

MR. BHUTANI: I think, Mr. Coon, you are right. And I have found the reference I was looking for. It is also in PUB-1, NBP-1, if you want to go to that.

That response breaks down to 390 that you are looking at perhaps. And it is on page 3 of volume 1, Mr. Chairman.

MR. MACNUTT: What page of volume 1 please?

MR. BHUTANI: At page 3 of volume 1 of the responses. And that ties into what Mr. Coon has said about CCNB-22 I think.

Q.34 - Yes. So that figure, would you be able to roughly translate it for us into a capacity that would be displaced?

MR. BHUTANI: Yes. The reason I wanted to get to this, Mr. Coon, is to answer each piece of it perhaps separately.

We talk -- on page 3 we talk of reduction of 135 gigawatt hours with improvement of thermal shell efficiency. That is usually at about 35 percent capacity factor in our calculations.

That would roughly be 50 megawatts on that piece alone in terms of -- Mr. MacPherson tells me it is 44 megawatts

on that piece.

Then the load forecast also assumes all new appliances are energy-efficient. And the effect is 110 gigawatt hours. I would suggest using a load factor of about 50 percent on that. And I think Mr. MacPherson is going to give me the right number for that. 25 megawatts impact of that.

And the next piece there is load forecast -- reduction of 145 gigawatt hours on general service. And I would apply approximately 50 percent load factor to that. And that again would translate into I think about 33 megawatts.

So we have 44 plus 25 plus 33, roughly a little over 100 megawatts as the impact.

Q.35 - Okay. Thank you very much. That clarifies that nicely. So 100 megawatts could be displaced, is anticipated to be displaced roughly in the load forecast.

Now Mr. Marshall, in the slides that were presented, the part of the slides you presented this morning, which I'm sorry, Mr. Chairman, I can't remember the exhibit, NB Power 5, was it or 6?

CHAIRMAN: I think it was marked 7.

Q.36 - 7, all right. It has been gotten up that far. Okay. NB Power 7, on page 6 you say "Because the load forecast already makes aggressive provision for demand

reduction measures, NB Power need only examine supply side options to any proposed refurbishment project for Coleson Cove and/or Point Lepreau."

So this roughly 100 megawatts of capacity that you expect to displace through energy efficiency over the forecast period, you believe is aggressive?

MR. MARSHALL: That is in Mr. MacPherson's evidence and presentation this morning.

Q.37 - I apologize. So it is. Well, Mr. MacPherson, would you indulge me here? I know I have finished with you. But if you wouldn't mind --

MR. MACPHERSON: I would like to thank Mr. Marshall for that. We have within the forecast in the range of 450 to 500 megawatt load reduction.

And that is made up of 150 megawatts self-generation. And it is made up of the substitution of penetration of natural gas in terms of the heating market.

And that is what we are referring to there, in excess of 450 to 500 megawatts of load going away as a result of that. And that is the aggressive nature that we were talking about.

When we are talking about a load of roughly 3,000 megawatts, shall we say, on our system today, we are talking about reducing that by in excess of 15 percent ultimately as a result of these demands.

So it measures not only the ones Mr. Bhutani talked about but also the others I have mentioned.

Q.38 - So to be clear then, you are defining demand side measures beyond the typical definition of increasing energy-efficiency at the end use, at the customer's end, to include other measures that reduce the demand on NB Power's system, is that correct?

MR. MACPHERSON: That is correct.

Q.39 - Okay. That helps clarify that. Thank you.

Now in response to CCNB 20, which is volume 1, page 81, NB Power indicates it cannot at this time provide any kind of sensitivity analysis that would examine how the provincial government's planned energy efficiency strategy might influence its need for generating capacity.

CHAIRMAN: Excuse me, Mr. Coon. What of -- which of your interrogs was that?

MR. COON: Should be 20.

CHAIRMAN: Okay. Thank you.

MR. COON: The details responses -- the details of the energy efficiency strategy are not yet available to provide the requested sensitivity. Now --

CHAIRMAN: If I might indicate, it's easier for the Board if you say Volume 1 and then our interrog number such and such, page 2 or 3 or whatever it may be, rather than going on the sequentially numbered ones. We have got enough

tabs up here to choke a horse. Even I can find it. Thank you.

MR. COON: I will try and do better, Mr. Chairman.

Q.40 - So here you say that the details are not available to provide the requested sensitivity analysis. And then -- see if I can get this right now -- in Volume 1, page 88, which is response to our interrogatory number 27, you say that specific programs under New Brunswick's energy efficieny strategy could be key factors affecting electrical demand both from energy efficiency and fuel switching.

So I guess my question is, is it possible that the planned energy efficiency strategy could reduce NB Power's currently estimated need for generating capacity, the 304 megawatts in 2007, when implemented?

MR. MACPHERSON: It is our view that -- first off we have taken a very aggressive approach in our view in terms of the impact that the energy policy is going to have, and it will have an impact in terms of the government's policy with respect to fuel substitution and obviously there is some price impacts as a result of what NB Power has been directed to do with respect to their rates.

We have taken we believe a very aggressive approach to the impact it is going to have in terms of reducing our load, or the capacity that we are going to have to supply.

And we also anticipate, as we have stated I believe in a couple of places, that these initiatives in the provincial government energy policy are going to be critical to having us achieve the load reduction that we have anticipated here, or we forecast.

We see, if anything, that the potential is if those initiatives aren't taken. that our load could be higher than what we have anticipated. Anything is possible in terms of the fact that load may be lower, but we think the probabilities are that it may be higher if those initiatives aren't taken.

Now what we have indicated we will do with respect to the particular project hearings, and that being Coleson Cove and Lepreau, or the replacement for those, is that we would do sensitivity analysis around these load forecasts. In other words, what if the load forecast is lower, what if it is higher, does it impact or does it change the options that we would consider. And by the same token, which is an issue that obviously the Board has to be very concerned about, what is the impact ultimately on rates to the consumer. Because that's really what we are talking about here.

And so we have said that we will do sensitivity analyses around that forecast and -- but we do not want to revisit the forecasts and say we are going back to basics

on the forecast and build it up from scratch again. But we would entertain analysis that indicates what if the forecast is this much higher, what if it's that much lower. And we will analyze the options and see if that impacts the options. And then it obviously comes down in the end result, what is the risk of it being higher or lower and how are we prepared or are we prepared to take that risk.

So that is the way -- the approach that we have proposed here.

Q.41 - I guess that differs from NB Power 7, page 5, in the top slide on that page where you say the sensitivities would not be offered for the purpose of revisiting question 1, that being the requirements for power from Coleson Cove and/or Point Lepreau.

MR. MACPHERSON: That's correct. What I -- I don't believe it's inconsistent in that regard and it certainly wasn't our intention to be. We have indicated all along that we would do sensitivity analysis around that forecast, but we do not want to build that forecast up subsequently from first principles that says, what if these types of measures were taken, or the like.

So we have done what we consider to be as good a job as we can on the load forecast. If anything it may be low if some of the initiatives that have been -- we have

talked about don't come about.

But we recognize that we are not going to be right with the load forecast. It may be higher, it may be lower, and it all comes down to a matter of risk. And we would analyze our option that we are proposing on the basis of higher or lower load forecast and present it accordingly.

We feel that it's obviously the flexibility that we have with our interconnected system to either buy energy if we are deficient, as you have pointed out already, or to sell energy if we have missed the mark in terms of our capacity that we have to supply in the province is critical to maintaining stable rates for our customers, and to provide reliable supply so the lights don't go out. And that's the approach that we would propose is to do the sensitivity analysis with respect to forecast.

At the end of the day you may say, we don't believe your forecast, we believe the forecast should be ten percent lower than that. We will show you what our plan will do if that low forecast is ten percent lower than that and show you what the impact is on our customers. And that's how we would like to approach it.

Q.42 - Thank you. As we established at the outset here, part of NB Power's mandate is to promote efficiency in the use of power.

I am going to have to jump to Mr. Bhutani here I guess, and that is in the load forecast in NB Power 1, Appendix C, you describe the energy efficiency you planned for in the load forecast as naturally occurring energy efficiency improvements. I think that's the language you have used. This is with respect to appliances and -- I know I am not going to find it in that load forecast, it's very detailed and well done but I didn't note the page, but I --

MR. BHUTANI: You are generally correct.

Q.43 - I think you have described, and certainly the models seem to assume this, that the efficiency improvements are in a sense naturally occurring based on price and other factors that will develop in a laissez-faire world.

So if that's the case, I guess why is NB Power not planning for more than naturally occurring efficiency improvements if its mandate is to promote efficiency in the use of power?

I'm not disputing your calculations on the -- or calling into question the calculations on the efficiency, the somewhat hundred megawatts you expect from these naturally occurring energy efficiency improvements, but what I am asking is why wouldn't NB Power fulfil the second part of its mandate to go beyond that to promote efficient use to try and get more than what would

naturally occur?

MR. BHUTANI: I am going to ask Mr. Stewart MacPherson to address that perhaps.

MR. MACPHERSON: The -- I guess when we look at energy efficiency and we look at the impact that it can have in terms of efficient use of energy and in terms of -- we look at it in two ways -- and in terms of its impact on the environment.

The key area that we think needs to be addressed is this whole area of fuel substitution. Your questioning in terms of your interrogatories with respect to some of the issues Mr. Marshall was involved in in previous studies and the Department of Natural Resource and Energy indicates that's a major area that initiatives can be taken.

So when we call -- and when you call that naturally occurring, we don't feel it is. That's not -- those are areas where initiatives we believe are going to have to be taken. They are particularly identified in the energy policy that initiatives will be taken there and that's where significant impact can be had with respect to his whole area of efficiency.

And we have taken fairly aggressive assumptions there. Now are we going to specifically try to take -- implement programs to see that some of those forecasts are achieved

as best we can? We don't know yet. We haven't made a decision on that.

But certainly the initiatives that the provincial government will be taking we think are important to that and we will wait and see just exactly what is going to happen there.

We do know that based on a recommendation made by this Board a number of years ago that our rates get within the 95 and 105 cost of service rate, and that issue was raised again in the energy policy. We feel that that can have an impact.

Also the initiatives in the energy policy with respect to declining block rate can have an impact. Also the initiative there that is requiring us to look at time of use rates and the implementation of that we think are going to have an impact.

And that's really the approach that -- that we see where as a utility we can work to the best advantage in terms of achieving those objectives.

MR. BHUTANI: If I may just add to that, clarify that also. When we talk about naturally occurring efficiency in the forecast we are talking about appliance efficiency models, not the issue that Mr. MacPherson has just addressed, in terms of natural gas reduction and price issues.

Q.44 - Thank you.

CHAIRMAN: Mr. Coon, is this a good time for us to break for lunch? It's 12:30.

MR. COON: Sure.

CHAIRMAN: If you have got just a couple more questions on this line, why carry on. Otherwise we will take our lunch recess.

MR. COON: On this particular line there are just a couple more questions.

CHAIRMAN: Okay. Carry on.

Q.45 - So I will try and be brief and we can finish this section off before lunch.

Mr. Bhutani, are you familiar with the 1992 study by Marbec Resource Consultants of the economically attractive potential for energy efficiency gains in New Brunswick? It was done -- set for the Department of Natural Resources and Energy, entitled Energy Efficiency Potential for New Brunswick?

MR. BHUTANI: I am aware of the study. I can't claim that I am fully familiar with it. Yes, I have seen it in the past.

Q.46 - So you are aware of it but not familiar with it?

MR. BHUTANI: Perhaps not as much as you would like me to be. I will take the question, if I can't answer it --

Q.47 - Well just a question as whether -- one, was it something you would have considered in doing your load

forecast for the forecast period, given that it looked at the potential for energy efficiency to 2010?

MR. BHUTANI: I think -- yes, I am familiar enough to answer the question to the extent that what we have included in the load forecast, Mr. Coon, is what we believe now to be the realistic estimate or realistic potential for energy efficiency.

I also understand it's somewhat less than what Marbec's study would suggest. Marbec's study is ten years out of date and I do believe that some of the numbers that the Marbec study had envisioned have already been achieved to the extent that a lot of -- as Mr. Marshall pointed out this morning, the fact that the load in 2000 was 300 megawatts or so less than what we forecast it to be in 1990 was partly due to energy efficiency measures that have taken place between that time and now.

Q.48 - Let me then go to something a little closer to home, and that's NB Power's 1995 integrated resource planning study, GIL 10, on pages 81 and 83 -- well the table 21 is on page 83, the text is on page 81 -- looked at what sort of demand could be eliminated through achievable energy efficiency by 2010, and this wasn't theoretic potential but it's outlined as achievable energy efficiency by 2010.

The study found there on those two pages, page 81 and page 83, and the table, that 318 megawatts of demand could

be eliminated through achievable energy efficiency by 2010.

Now can you explain the difference between this estimate -- I realize it's some years back now, but it's the most recent one besides the current load forecast that we could find that had been submitted as part of the -- in this case the response to interrogatories I guess.

The difference between this 380 megawatts and the roughly 100 megawatts that the current load forecast anticipated, is it, one, the difference simply because we have achieved 218 megawatts since that time, or does it relate to the fact that in this study it anticipated NB Power proactively involved in programming to promote efficiency at the end use and try and achieve this target, 318 megawatts?

MR. BHUTANI: I wouldn't mind reviewing the Marbec study during the break and come back with a more positive answer for you. I just want to go back and look at the 380 megawatts you are referring to. Would it be possible to look --

Q.49 - Sure.

MR. BHUTANI: -- at the issue a little bit more.

CHAIRMAN: Yes. You were reading from that report or study I presume, Mr. Coon.

MR. COON: This is the NB Power's integrated resource

planning study I was just reading.

CHAIRMAN: I see. All right.

MR. COON: That's GIL 10.

CHAIRMAN: I see. All right. But you are referring to what was in the other study?

MR. COON: Earlier on. Well I haven't referred to it yet. I was just asking -- trying to determine whether --

CHAIRMAN: I think we will break for lunch and if you do have a copy you can share with Mr. Bhutani over the lunch break that would I think speed things along.

MR. MACPHERSON: Sure.

MR. BHUTANI: We have a copy, Mr. Chairman. We do have copies I think.

CHAIRMAN: It's now 25 to one. Back at quarter to two. Does that sound all right for everybody. All right. We will break until quarter to two.

(Recess - 12:35 p.m. - 1:45 p.m.)

CHAIRMAN: Before we start or continue the questioning, are there any matters counsel wanted to bring or parties wanted to bring to the Board's attention?

All right. Mr. Coon, go ahead.

Q.50 - Thank you, Mr. Chairman. Let me try and reframe what I was going after earlier before we broke.

This panel, one of its primary purposes is to look at the impact of the energy policy. I think, Mr. MacPherson,

your evidence went directly to this, the impact of the energy policy or potential impact of the energy policy on the need for future generation resources.

We have in the load forecast the assumption that 100 megawatts of generating capacity will be displaced by energy efficiency improvements that will occur over the next 10 years, during the forecast period.

My question then is, above and beyond that, what possible impact may the provincial energy policy have on that number, where the provincial energy policy makes a strong commitment to implementing an energy efficiency strategy that is designed to ensure energy efficiency improvements are as far-reaching as possible?

MR. MACPHERSON: Just to clarify, were you referring this to the previous IRP and to the Marbek study?

;Q.51 - Let's set that aside for a minute.

MR. MACPHERSON: Okay. As I said before, the main feature that we see within the energy policy that is going to lead to energy-efficiency and reduce load that New Brunswick Power is going to have to supply is going to be the initiative for substitution of heating, electric heat with gas heat in the province.

As well it may be -- it is important to get sort of a flavor as to what we see has occurred, and in relation to that 100 megawatts that we calculated approximately there

this morning.

And I had asked Mr. Marshall to do that with respect to what the Marbek study envisaged and what we had envisaged in the IRP that we developed in the mid '90's. So maybe if he could do that now?

Q.52 - Please.

MR. MARSHALL: Yes. In the question you asked this morning you referenced the IRP at page 81. And that is document GIL 10, of the 318 megawatts of demand reduction by 2010 was selected in that IRP evaluation.

I just want to clarify that you understand the relevance of that in terms of how it is done. In that study, that 1995 IRP study, it was based on a 1993 load forecast.

But it was not the official 1993 load forecast. The 1993 load forecast had included in it demand side management programs that had been approved and were put in place prior to that.

And so since we were evaluating additional demand side options, we didn't want to double count the options in the load forecast and then count them again as additional reductions that may occur.

So all of the thermal shell improvements that were related to demand side programs that were targeted and were being pursued at that point in time were added back

into the load. So the load forecast in the 1995 IRP study was the '93 forecast readjusted back before DSM.

And if you actually look on page 10 of that document the chart shows that the forecast load for 2010 under that basis was about 4,000 megawatts. The 318 megawatts then that was selected would have brought the load down to a little less than 3,700 megawatts by 2010.

Now as I said earlier this morning, the actual occurrence of load growth through the late '90's and on is lower than was forecast.

How much of that is attributable to achieving a lot of that DSM through efficiency programs -- and the efficiency programs that we had in place at that time in addition to R-2000 were -- there was a shower head exchange program. There were lighting programs. There were high-efficiency motor programs. There was a self-assessment audit.

And we continued with that with energy advisers doing audits of households and providing education information, as Mr. MacPherson has said.

And of course we also had our conservation and electrical improvement loan programs where people would be able to make the investments necessary to achieve a lot of those reductions.

So through that, the result is that the load ended up being significantly lower. Now we are currently in a

situation that in the current load forecast we have 319 megawatts forecast for 2010, after we have accounted for the 100 megawatts that was considered this morning, 150 megawatts of industrial self-generation and a further 250 odd megawatts of electricity replacement with gas.

So you add on that 500, we are up to around 35' -- 3,600 compared to our projected level of around 3,700 from 1995 on.

So basically the forecast that we laid out at that point in time in the IRP and where we are today relatively are in line with each other.

Q.53 - So my question then is -- and thank you for that -- is with the addition of new programs under this new energy efficiency strategy that will be implemented during the forecast period, how much more on the energy efficiency side can we expect beyond the 100 megawatts currently forecast in the load forecast?

MR. MARSHALL: I think in -- what I'm saying is inherent in the forecast now a significant amount of the shell measures for building insulation and homes are already included in the forecast and in what we have got.

There may be some additional amounts in an aggressive program after those. If they are in shell measures and the heating is switched from electricity to gas, it won't show up anyway. They are captured through the

fuel-switching, not through a reduction in the load.

So we don't want to double count and hold out that there is an additional 100 or 200 megawatts when in actual fact we believe it is already accounted for in the fuel-switching program that we have got of 250 megawatts.

Q.54 - So the question remains, I guess. Has NB Power looked at in a sense the remaining economically attractive opportunities for increasing energy efficiency by our customers, all classes of customers, between now and 2010?

What is the remaining potential? And then is more -- if the necessary programs are in place, is more achievable than the 100 megawatts that you have planned for.

MR. MARSHALL: There may be some small areas. When we look at the '95 IRP study we identified a significant number of end use options. And they were all evaluated. All of those were included in that study and were in the 318 megawatts. I think most of it is there.

The other area where there is significant opportunity that was done as a sensitivity in that 1995 study was fuel-switching. At that point in time, gas was not available. And it was not considered to do fuel-switching, electricity to gas.

The fuel-switching options that were studied were electricity to oil and dual-fuel furnaces of various things. The economics of those didn't pan out at that

point in time.

Now with the energy policy and the target to have gas available throughout the province in a number of regions and the intent to utilize gas, we see that those fuel-switching type options with electricity and gas then provide for significant additional opportunities.

Now we think that there are not any other opportunities other than getting those gas. The amount of -- the small amount of programs that might be targeted at lighting or some areas are going to be small in relation to what can be achieved through fuel-switching, gas and electricity.

But we don't think -- we think that -- we are very aggressive on the fuel-switching. And then inherent in that we have already included everything else.

Q.55 - And why I ask is -- you clearly must be familiar with that Marbek report that I spoke of where it estimated the theoretical potential for energy-efficiency that was economically attractive in 1992 terms at about 1,000 megawatts theoretical, not achievable but theoretical, and then suggested that if the right mix of programs and measures were put in place through an energy-efficiency strategy, somewhere between 300 and 700 megawatts of that would be achievable.

Your IRP report would agree with the bottom lower

estimate, around 300 megawatts, or back then agreed more or less with it, 300 megawatts.

So the question remains whether or not there is more in the system than you are assuming that can be got out with the implementation of an energy efficiency strategy, quite aside from fuel-switching.

MR. MARSHALL: Again as I said, the forecast from -- well, from the '93 forecast -- and I believe the Marbek forecast was slightly higher because that study I think was based on 1990 or '91 forecasts -- it would be about 4,000 megawatts by 2010. Now even taking the outside number of Marbek as 700 would bring the load down to around 3,300 megawatts by 2010.

Our current forecast is at 3,000 megawatts. So we are 200 megawatts below where we would be if we achieved everything that was in the Marbek study.

Now so how much of that we have missed in programs from then until now, how much of it we are achieving without a specific program to target and then go after it, I really can't say.

But I think a significant amount of it has been achieved through the programs that we initiated through public education and consumer information of using energy more efficiently.

And I think that our current forecasts are in line

with the mid range of the Marbek numbers, let's say probably about 500 megawatts.

Q.56 - That is -- all of that was got by improvements in energy efficiency though, right?

You are saying you can't really tease out what the impact of those energy efficiency programs was based on other factors that might have affected load growth?

MR. MARSHALL: I guess it is how we define efficiency. If people choose to use less then it is through conservation. If they choose to continue the same amount and do it in a more efficient manner, it is through efficiency. But the forecasts are lower by 500 megawatts from where they were.

Q.57 - But it could speak to your errors in forecasting rather than effects of energy efficiency programs, right. Now you make various assumptions in your forecasts. And that doesn't necessarily just mean the energy efficiency programs are, as you said earlier, the cause of that shortfall or that change?

MR. MARSHALL: I guess Mr. Bhutani might speak to that. The data that is in the load forecast would depend on the number of households, population growth, use per end use in appliances.

And I think you will see over the forecast period that the end appliance use, the natural occurring conservation as referred to, has been going down. That is attributable

to improvements in the technology. Those numbers then would reflect a portion of the Marbek numbers.

Because the Marbek study I believe was done with a frozen efficiency forecast. So all efficiency improvements would be in the 3' to 700 megawatts in the Marbek report.

In addition to that, any public education, the amount of energy per household for heating, for water heating that would be in the load forecasts as they have been adjusted over time to lower numbers reflecting conservation and improvements in houses.

So those changes in the load forecast, I wouldn't attribute to load forecast there. I would attribute them to improvements in efficiency and use.

Q.58 - Okay. Thank you, Mr. Marshall. I would like to turn to -- on the NB Power 1 on page 16, question 13. The question of the power supply planning process considering environmental criteria. And you were asked to comment on what environmental considerations would impact on the refurbishment plans.

And you said in your response, "Because power supply options have long lives, it is important not just to consider current standards but also include provisions for direction that future changes and standards might take."

What is the range of life spans for the various power

supply options which should form that planning horizon and thinking about the future changes in environmental standards?

MR. MARSHALL: We are currently viewing the next 10 years as a significant range of this in our current studies.

Q.59 - But you say that because power supply options have long lives. Can you give an estimate of, you know, the various length of the lives of power supply options you might consider? Are they 10 years or longer?

MR. MARSHALL: Most power plants, depending upon the nature of the technology, could have a life of 20 to 40 years. The options that we will be considering at a supplementary hearing to approve a specific project, looking at life extension options or refurbishment options at Coleson Cove and Point Lepreau -- I don't know if we have got a definitive number of years, but I think would probably be 20 years, you know, in that range, 20, 25 years.

Q.60 - Thank you. Which takes us to question 16 on NB Power 1, page 18, NB Power 1, which has to what is the issue with climate change?

You note that in 1997 agreements at the Kyoto meetings, where it has been proposed that CO2 emissions be reduced by, somewhere around the end of the decade, to a level 6 percent below that of 1990, these were reached under the legal framework provided for by the UN

Convention on Climate Change.

This is a legally binding convention that did require ratification and was ratified by Canada. And we are legally bound by the convention and have been since March 21st 1994.

The question is given the overall goal of this convention to stabilize the concentrations of greenhouse gases in our atmosphere, what provisions should NB Power include in its resource planning process to anticipate future standards that might reasonably be expected to flow from the climate change convention, if we are talking about a 20 to 40 year life span for power plants, or 20 years in the case of refurbished plants?

MR. MARSHALL: First of all, our obligation is to meet the standards for emissions that are laid down by the Departments of Environment, the Federal government and other regulatory bodies. That's our first obligation.

The issue we spoke to in the earlier question is because projects have long lives we can't just look at what are the current limits today and say that's what the regulation is, that's the standard. It's more incumbent upon us to look forward and say, what are reasonable projections of standards on a go-forward basis and then attempt to consider those, because they could influence the economics of choices.

Now with respect to climate change, there is no standard as yet laid down. The issue of whether or not Canada is going to come and meet its requirements under the Climate Change Convention or is going to meet Kyoto or not, those are questions I can't answer, and I think there is enough controversy and issues with President Bush's position on Kyoto and where Canada sits relative to the Americans.

I can say that we as an industry in Canada have participated in many studies. We have submitted a number of them here in response to interrogatories to say that we know that unilaterally applying a CO2 limit on New Brunswick would be very detrimental to the New Brunswick economy and that New Brunswick would suffer regionally worse than most areas of the country. That's one area that we have done.

Our position from the utility is that this is a global problem and that it's a Canadian commitment. We will work with the provincial government, and the agency responsible there is Natural Resources and Energy. We will work with them in terms of developing a climate change strategy for New Brunswick as part of a federal program.

But our position is that it should not unilaterally be done in Canada. As a trading partner in the North American economy it's essential that we stay in line with

what the United States is doing, and that we believe that CO2 should be considered in global aspects on a much wider range than specific allocations by industry or by area.

So we believe, as Mr. MacPherson said earlier, we support the Canadian Electrical Association proposal that was given to the Department of Environment -- federal Department of Environment for consideration, which would be a phased-in approach of allocating an emission performance standard to generating units as they come to the end of their lives.

This is a way of allocating credits essentially to move to a trading system over time, which we believe is the most efficient means of addressing climate change.

Q.61 - I appreciate your position, Mr. Marshall, but that doesn't really speak to what you should be anticipating in terms to future standards with respect to your resource planning process.

It's one thing to have a position but for resource planning purposes surely you have got to anticipate what may occur and integrate that into the planning?

MR. MARSHALL: Our position is that a North American trading system will be developed and that through that the most efficient means of CO2 control and reduction will be generated, and that the value of CO2 then can be looked at in terms of that sense, what is the mitigation cost of

that and how you might consider it in looking at options.

Now when that's going to be developed, to what extent, what the caps will be, those are issues that are not resolved.

And so we can speculate on what they might be, and our position is that we would consider CO2 emissions in any evaluation as a sensitivity issue and we would look at possible cost issues on CO2 and how they would influence any resulting option.

Q.62 - Thank you. If we could move to Mr. Bhutani, I just have a couple of questions for him.

I just want to clarify, Mr. Bhutani, that in fact the hundred megawatts in your load forecast does not anticipate the impacts of new efficiency programs from the new energy policy? That this is what you anticipate if there was no new energy policy, no new energy efficiency strategy?

MR. BHUTANI: Well I think you are correct in your interpretation. I just want to clarify that the provisions we have made are perhaps aggressive and they may be achieved as a result of the energy policy, but no, we haven't made any direct impact of the energy policy in terms of hundred megawatts.

Q.63 - Thank you. Now with respect to your -- in NB Power 1 -- where are you -- your question 9 which would be page 40,

this question dealt with how the load forecast addresses the potential impact of non-utility generation and the load forecast as presented allows for 150 megawatts of self-generation to displace existing purchases as has been noted just recently by Mr. Marshall.

However, there are a number of variables here which were spoken to by yourself and the others in the responses to interrogatories, ranging from the efficiencies available through industrial co-generation, higher capital cost allowance rates for co-generation and certainly surrounding the economics of self-generation from existing process steam, the raw fuels other than natural gas, the value of the synergies available to large industrial customers through their own processing, especially if they have process steam requirements, and industry's use of market opportunities in New England and possibly in New York to subsidize its self-generation which will be available through improved transmission access at one level or another sometime in this forecast period.

My question is, could you put error bars around your estimate given these variables of 150 megawatts of self-generation, in terms of low and high?

MR. BHUTANI: As we have identified in response to CCNB 12, the 150 megawatt number first of all was a collective assessment of many people within the corporation as to

what is the realistic magnitude of the self-generation.

If I was expressing an opinion I think 150 megawatts is on the high side. I think Mr. Marshall and Mr. MacPherson may elaborate further on that issue. But I think today with what we know the chances of self-generation exceeding that amount are very low. The chances that self-generation may be less than that are probably higher.

Q.64 - Thank you. Was there any further comment?

MR. MARSHALL: I would just like to add a comment to that. I think the real issue with the 150 megawatts of self-generation is going to reflect on the price of natural gas and with the current forecast prices of gas I tend to agree with Mr. Bhutani. I would think we may not achieve the 150 megawatts. If gas prices fall significantly then there may be an opportunity for more.

Also I think if we are successful in accomplishing the transmission projects that are now on the books as targets for the second tie to New England and the Neptune project, and gas prices adjust, an opportunity, then there may be more, but it may not be for in-province load, it may be targeted for export. So I think that's the issue.

Now with gas prices, I know there are others here in the room and intervenors that gas prices are very important to. Gas prices today just reduced for the next

few months.

So gas prices at least at this time of year are going in the right direction for encouragement of these projects, but they still have to go a significant way before gas projects will be lower cost than our current supply costs are in the province.

So unless gas prices fall it's going to be unlikely we are going to get the 150 megawatts.

Q.65 - Do you stand by that opinion with the availability of access to the New York market if it comes for industries to subsidize basically their self-generation by exporting into that market?

MR. MARSHALL: That would -- with the Neptune transmission into New York, that transmission is going to require generation resources to -- or parties that are prepared to book transmission on that system in order for it to get built. Those parties are going to have to have some energy that they are going to want to transmit across that system in order to make use of it.

To the extent that that could be an industrial customer that builds a project larger than its load and takes the excess and sells it, if they can use that -- the profits off the sale to subsidize the energy they are going to use for their own use, that will improve the potential for the 150 megawatts.

Q.66 - Thank you.

MR. MACPHERSON: If I may add just a comment on that to give the contrary view to the value that these interconnections -- increased interconnections to an area like that may be, and Mr. Marshall alluded to it a minute ago, is that if you have increased transmission access into some of these higher priced or higher value markets, it may result in more generation being built in New Brunswick, but it may also result in less of it being used to displace current load that NB Power is supplying.

So it's not a clear answer yet that even if additional generation is built in New Brunswick as a result of these increased interconnections, whether or not it will be used to displace current load that NB Power is required to supply.

Q.67 - Thank you.

MR. THOMPSON: Looking at the forecasts and going out ten years, and I guess we realize that that's always difficult, certainly in some other countries and particularly when we think of places I suppose like Denmark and Germany we are seeing quite a lot of wind power in those countries now, a significant amount, up and over 20 percent in some cases.

And certainly in New Brunswick here if it's one thing we do have we have the wind and the potential for some

power, and I really don't see a clear identification here going out ten years as to what we expect, you know, in the way of wind energy and other renewable energy technologies.

I know that in respect to one of the groups that we are involved with, or rather I guess that are involved with us, the environmental network in the province at the current time are thinking of installing some micro hydro, and would have it installed now except that NB Power is refusing to -- you know -- to buy the excess that they have. It would be economic if that were the case. Now --

CHAIRMAN: Mr. Thompson, I am going to stop you because -- if you want to take the stand you take the stand. We are just getting further and further away. If you have a question about wind power the Board welcomes it.

MR. THOMPSON: Okay.

CHAIRMAN: You have given testimony as it were about 20 percent of the requirement of some Scandinavian country to use wind power and now you are talking about somebody who is associated with the organization.

I don't want to cut you off but you are here to ask questions of this panel. And if you want to ask about wind power and what the plan is, go ahead, sir, but don't give testimony before you give your question.

MR. THOMPSON: Given emerging and present wind technology

what do you see in New Brunswick? What do you see there in 2010?

MR. MARSHALL: As we have documented at page 36 of the NB Power 1 in the load resources review, we lay out options that we would look at in order to provide for capacity requirements in the future. And included in these options are hydro, wind, micro turbines, fuel cells, along with all conventional options.

We will look at wind. We looked at wind in the 1995 IRP. The economics of it don't measure up against other alternatives or against our current cost structure in New Brunswick.

But we certainly will review wind again in any subsequent hearing on a project. And we currently are involved now in additional research on wind as we reviewed at Miscou Island before, and we are involved with some of our customers today looking at additional possibilities of wind research and data to be able to look at wind developments on a go-forward basis.

So we will review that in a subsequent hearing.

MR. THOMPSON: Do you currently have any proposed projects, any renewable projects, within that ten year period?

MR. MARSHALL: As I said, we have hydro projects, we have -- there are small hydro projects done from review studies of all hydro potential in the province.

We will review the projects that are available as alternatives to a refurbishment project and we will evaluate the economics of that relative to a refurbishment project at a project specific area.

MR. THOMPSON: In this document number 1 under resource planning process, page 24.

MR. MARSHALL: Yes, I have that.

MR. THOMPSON: Under reliability criteria. The last paragraph. A utility must not -- must be careful not to become overly dependent on any one source for its total supply. What would be the percentage of supply from any one generating unit that would be looked on as overly dependent?

MR. MARSHALL: In what aspect? The capacity size from a fuel source? What aspect are you referring to?

MR. THOMPSON: From a capacity side, what side -- what size of a generating unit would be -- would make the Commission overly dependent upon it? What size?

MR. MARSHALL: The general rule of thumb in isolated power systems is that the largest unit should be no more than about 10 percent of the size of the size of a system in an isolated system. In -- with much larger interconnected systems, because of the larger interconnections, you can build units larger than that particular size.

MR. THOMPSON: How close are you to it with Lepreau now with

635 megawatts?

MR. MARSHALL: Lepreau is about 20 percent. Lepreau on the 20 percent reserve criteria are right on the line with each other, so from a reliability point of view, that is the -- Lepreau is at the 20 percent range now. From a -- the reason that you would want a unit in the order of 10 percent comes down to the dynamics of the system and the ability to withstand the loss of one of those units at any point in time, so you are talking about it's for the reliable operation a security of the system in case of the contingency failure. Can the system respond to that loss in a short period of time with operating reserves in order to keep the system stable and keep the system operating?

Now with our large interconnections we are able to operate the system efficiently and reliably so that the 10 percent rule now really doesn't apply to the New Brunswick jurisdictional system, because the system that operates it really is the whole Maritime interconnected system with interconnections into New England and Quebec, so that through that the system is large enough to -- so that you could operate and withstand a loss of that unit.

MR. THOMPSON: How long could we -- how long could we stand that loss?

MR. MARSHALL: Okay. Now we are talking about sustained loss of energy and supply. The -- again with large

interconnections you can utilize the external markets through those interconnections in order to purchase energy in periods of short fall. And we experienced that this past winter. Point Lepreau was down for a week over Christmas when we were near peak loads, it was cold at that time, and we were able to get energy out of the rest of our system and we were able to bring in energy from New York through Quebec in order to maintain our supply to all of our customers.

MR. THOMPSON: So am I right in assuming you got along quite well without it except for the increased cost to the utility?

MR. MARSHALL: We managed to survive and there was significant increased cost, yes.

MR. THOMPSON: Going back again to my previous question, what now would you -- what would you accept or what would you perceive as being too dependent on what -- one unit? What size would that unit be within the system when you would be too dependent on one unit?

MR. MARSHALL: Well I think the current Lepreau unit is at the limit. We wouldn't want our units any larger.

MR. THOMPSON: Thank you.

MR. COON: Thank you, gentlemen, Mr. Chairman, that ends our questions.

CHAIRMAN: Thank you, Mr. Coon. If you would like to vacate

the examining chair. The Department of Natural Resource & Energy.

MR. HYSLOP: Well thank you, Mr. Chairman. I appreciate the opportunity to appear before the Board. My first time and I will resist the temptation to refer to you all as my lordships and I will try not to stand too often.

Mr. Chairman, my initial questions relate to a consideration of the mandate of NB Power.

CROSS EXAMINATION BY MR. HYSLOP:

Q.68 - And I would like to start by asking Mr. MacPherson in particular the promotion of efficiency in the use of power and in particular would NB Power have a different view of the efficient use of power than the general public, and if so, what would be those difference?

MR. MACPHERSON: I think -- I don't know if I can answer your question or not in terms of what the public actually thinks about it. I do know that it is high on the public's agenda in terms of getting good information with respect to energy efficiency, and we try to provide that.

One of the questions that was raised this morning concerned that, and that is the main area of our program at the present time, is to try and deal with the whole issue of energy advice to our customers. And I think in that regard that we have somewhat the same objectives as our customers do. And if there is anything specific that

you would like to refer to, I may be able to comment on that but --

Q.69 - Well I will put perhaps a suggestion to you, Mr. MacPherson, that the public -- the general public would have a strong need where possible to be able to provide the requirements, the heating, the industrial production of its resources with the lowest amount of energy possible. Would that be a similar -- a requirement of NB Power?

MR. MACPHERSON: That's correct.

Q.70 - And I note in particular in looking at the load and resources review, which is the appendix B in Volume 1 of NB Power, and the load forecasts that allowances have been made for retail and customer fuel switching and self-generation.

But I am wondering particularly in the industrial sectors what type of comments you can give us with regard to the extent that industrial users are likely to become more efficient users over the next ten years.

MR. MACPHERSON: We find industry by and large is concerned about the efficiency of their operation and so that is an ongoing practice with them.

However, in terms of some of the initiatives we have, we have just recently implemented time of use rates in that category which really tries to match our costs of

supplying the customer to the rates that we would charge them on a time of use basis.

And we think as a result of that there is going to be some opportunity for them to move their loads around to save some dollars on their side in terms of their bill and also for us to save some costs in terms of how we supply those loads, so that's some of the major initiatives that -- that is probably the major initiative that we have with those customers at the present time.

Q.71 - And I take it then as part of your process has NB Power in fact met and analyzed the potential for electrical efficiency with these major industrial customers?

MR. MACPHERSON: We meet with those customers regularly to try and understand what their requirements are and try to have them understand what our plans are and where we are actually going. As far as doing any great detail with respect to their particular operation, obviously they are more capable of doing that, but we do have dialogue with all those customers so that we basically try to understand their issues and then to see if we can adopt any of our programs that can help in terms of their overall efficiency and their overall productivity.

Q.72 - Would it be fair to say that in the greatest extent your industrial users are driven by market forces to find the most efficient use of electricity in their businesses?

MR. MACPHERSON: They are generally driven by cost. Electricity is only one part of it. There are processes, as an example, that are more electricity intensive, if you will, in the industries that we deal with, yet it is -- it allows them to take greater advantages of some of the resources they have. So it doesn't necessarily mean that as a result of trying to extract more value out of their operation that they are going to use less electricity. In fact in some cases it is just the opposite.

Q.73 - They would use more electricity looking at impact on other costs?

MR. MACPHERSON: That's correct. This is some of the processes within the pulp and paper sector, for example, are more electricity intensive than others but can take and make better use of some of the resources that they have.

Q.74 - Has there ever been any consideration of incentives that might be offered to industrial users of electricity that would reduce their consumption?

MR. MACPHERSON: As I say, the incentive that we have is with respect to their moving some of their consumption off peak which we have put time of use rates in place for that. Now what that does is it tries to reduce their impact on our peak load, which is really the load that we have to plan for from a capacity point of view, so we have

put some of those mechanisms in place recently with the time of use rates in the industrial sector.

Q.75 - Is there any evidence that NB Power could be producing at a specific hearing that would permit a review of the potential efficiencies of electrical use in the industrial sector? And maybe to be more particular, I would be referring to a specific technology or analysis that have been completed that would be useful in assisting industrial users towards a more efficient and effective use of electricity?

MR. MACPHERSON: We hadn't contemplated that.

Q.76 - Is it something that would be provided? Is that type of technological advancement -- evidence available that could be part of a record?

MR. MACPHERSON: There are a couple of classes of industrial customers. First off you get the very large customers and they have a lot of technical capability within their own operation in order to be able to do that sort of thing. We do provide advice to small customers, if you want to talk small industrial customers. And -- in terms of uses of electricity and how they may be able to take better advantage of some of the programs we have.

But your question as to whether or not we were going to analyze any of these end use options with respect to any project hearing, it's not our intention to do so.

Q.77 - Even before that it's not your intention to produce such evidence would I be correct in stating that evidence as to potential reductions in specific industrial users is available and NB Power has knowledge of such information?

MR. MACPHERSON: We have knowledge that we gain by virtue of discussions with our industrial customers. We receive a lot of this information in confidence in order to help us plan better to meet their requirements, and we -- our position has been that without the consent of the particular industrial customer we wouldn't be making it available.

We do make it available in aggregate in terms of a load forecast as you see it, but we don't make it available with specific customers, and that has been our position.

MR. MARSHALL: I might add to that that we have looked at high efficiency motors, we ran programs in the past in order to try to move the standards, to move the industry towards high efficiency motors, and for variable speed drives, so there -- and we have some expertise in that area, and we talk with customers and we provide some advice and assistance in some way for some of those types of end use technologies.

But we don't have a specific program or a target of this is how much we are going to get and how we are going

to get it from those areas.

Q.78 - If an industrial user came to NB Power with a plan or a concept to reduce their volume of electricity that they would be requiring, what would be the procedure at NB Power to deal with such a request?

MR. MACPHERSON: Let's just paint one scenario here, where they may be approaching us on the basis that they want to self-generate and that basis would reduce the load that NB Power would be supplying to them.

What we would do is we would first off work with them to try and implement the policies that are under the provincial government white paper with respect to no cost transfer to other customers as a result of them doing that.

We would work with them with respect to the provincial government to try and get an Order-in-Council with respect to building those facilities.

And we would -- we have a policy in place that allows us or allows them to sell energy to us if they have energy in excess of their needs, and we would pay them a percentage of our avoided costs on that basis.

So there is some mechanisms here that -- where we can potentially help in terms of the economics of their project such that it may be able to work.

As well we may have -- we may have facilities around

the province that they can make use of. In other words, we may have transmission systems that are close, we may have land that is close, we may have generating facilities that are close, in which case we may be able to take advantage of some of those synergies.

And that's sort of the approach that we would have with those customers, to see if there is something that can facilitate what they want to do and keeps our -- the balance of our customers whole in that no costs are transferred to them.

Q.79 - Does NB Power generally encourage its customers to be a more efficient user of electricity in the industrial sector?

MR. MACPHERSON: Well encouragement implies a program which actually provides some incentive. So we -- we don't have any particular program in that regard.

MR. MARSHALL: But we do like to keep them as customers, and so to the extent of efficiency and efficient use of energy makes their overall business efficient and they are successful and they continue to operate, then we are happy with that.

Q.80 - Thank you very much. I appreciate that perhaps some of this has been dealt with by Mr. Coon's cross examination but perhaps for some clarification, page 31 of appendix C in NB Power 1, Mr. Bhutani's low forecast allows for 150

megawatts of self-generation by the industrial sector.

And again perhaps for the sake of clarification, what is the basis for this allowance and how certain is NB Power in this projection?

MR. MACPHERSON: What page is that again?

Q.81 - Appendix C.

CHAIRMAN: Mr. Hyslop, if you could just quote the bottom right-hand corner number so we will be consistent. That's in NBP-1.

MR. MACPHERSON: If I could just -- while you are trying to find it -- if I could just talk about the process by which that was devised. As I said, we --

CHAIRMAN: Mr. MacPherson, I'm sorry to interrupt, but perhaps let him find it so we can all find it and then we will know what the question is that he is putting to us. Thanks.

MR. MACPHERSON: I believe it is page 78 of --

Q.82 - 78, yes.

MR. MACPHERSON: -- of the pre-filed evidence.

CHAIRMAN: It is page 78.

Q.83 - It is page 78, yes.

CHAIRMAN: Could you re-pose the question?

Q.84 - Yes, I would, Mr. Chairman. Mr. Bhutani's load forecast allows for 150 megawatts of self-generation by the industrial sector.

We are asking what was the basis for this allowance and how certain is NB Power in this projection? That would be the first part of the question.

MR. MACPHERSON: As I was indicating, we did file a document with respect to the process by which this was devised. This has been developed based on discussions that we have had with all of our industrial customers and the intentions that those customers have and the options that they are looking at.

We consider this number to be a very realistic number in terms of the intentions of some customers to be able to generate to displace this amount of firm load that we are presently supplying in the province.

I should point out that we would also anticipate as a result of this 150 megawatts of load being displaced there would be greater generation than that developed by in-province industrials, and we would evaluate that as a purchase option with respect to any option that we have such as the project at Coleson Cove or Lepreau.

So we see that the firm load to be displaced is in that order of magnitude. We see that based on discussions that we have had with customers in terms of what their intentions are. And we also see that there will be additional capacity as a result of that which could either be used for export or to supply load in the province.

Q.85 - Has NB Power taken steps to analyze the information that has been provided by their customers to determine whether the customers' projections can be considered reliable?

MR. MACPHERSON: Yes, we have, and the follow-on question is that yes, we feel they fully understand what the economics of these situations are.

The two key variables here are what is the price of gas, and excess generation, can it be sold and to what market can it be sold into. So -- and they are quite cognizant of the economics of these projects and they have done a lot of work -- some of them have done a lot of work in this regard.

Q.86 - New Brunswick Power load requirements are aggressive in their anticipation of the use -- the residential use of natural gas to displace electricity in the residential sector, notwithstanding that energy has a distinct cost advantage over oil and a small cost advantage over natural gas.

On what basis does NB Power make its aggressive forecast relating to the use of natural gas given these economies?

MR. MACPHERSON: We are basing this on the initiatives that are being -- were being identified as potential initiatives under the provincial energy policy. We see it

as being a method of being able to address the issue of the environment.

I should point out one fact here with respect to this, is that natural gas is the only fuel that is used exactly the same in your home and in end use spaces as used in a power plant. You can burn it in a home more efficiently than we can burn it in a power plant and you can burn it in your home to heat the space with less emission, environmental emissions than we can in a power plant.

So we think it makes sense and we are -- we are assuming that the initiatives that the provincial government has indicated in the energy policy will be -- will come about.

Q.87 - In Volume 2 of NB Power 1 dealing with interrogatories DNR 13, which is at page 126, NB Power indicates that the displaced electricity is based on the premise there will be incentives to encourage the penetration of natural gas.

Can you describe to me exactly what incentives you are referring to?

CHAIRMAN: Mr. Hyslop, what interrogatory was that?

MR. HYSLOP: That was --

CHAIRMAN: From whom to whom?

MR. HYSLOP: -- DNR 13, Mr. Nicholson. And it is on page 127. The interrogatory starts on page 126. But the particular section I'm referring to is at the top of page

127.

CHAIRMAN: Yes. The Board has all the interrogs --

MR. HYSLOP: Yes.

CHAIRMAN: -- by number, et cetera. I don't know if that is the way your volume is or not. So that is --

MR. HYSLOP: This is DNR 13.

CHAIRMAN: -- DNR 13?

MR. HYSLOP: Yes.

CHAIRMAN: And we have got a tab for that. And it is real easy to get to it --

MR. HYSLOP: Yes. Okay.

CHAIRMAN: -- if you just quote it that way. Thank you.

MR. HYSLOP: Thank you.

MR. MACPHERSON: We consider that the economics of the fuel substitution will probably be addressed in two fashions. One in terms of the electricity rates by virtue of the fact that the energy policy is requiring us to supply those customers that between 95 and 105 of their cost of service. That is one initiative.

And the second is to look at the end block rate or declining block rate on their residential rate. And we will be doing that. So we are assuming that there could be some incentives here from the point of view of price with respect to electricity itself.

The second thing is that we are assuming that where

the provincial government has taken this as a specific initiative with respect to fuel substitution, and also where they have -- they are planning to present a plan with respect to climate change within the current year, we see that this is -- this area being one where incentives have potential to work to achieve the results desired in terms of substitution to natural gas, reduce environmental emissions.

And we see that there is potential there for incentives to do that. We are assuming that the provincial government will be implementing some incentives in this regard.

Q.88 - Or --

MR. MACPHERSON: Or the federal government by the way.

Q.89 - In any event, so these are not incentives that will be offered by NB Power except in the event that the electricity prices should continue to go up while natural gas would remain stable?

MR. MACPHERSON: We look to programs from the government to do that. That's right.

Q.90 - And again what level of reliability do you have at the present time that these programs are forthcoming? And do you have any actual knowledge of programs that are in the early stages of implementation or consideration?

MR. MACPHERSON: We have no knowledge of any -- the status

of any such programs.

Q.91 - So in other words at this time the rather aggressive penetration of the natural gas as a substitute at the residential sector, there would be some uncertainty with your projections as presented in the load forecast?

MR. MACPHERSON: That's correct. We did indicate in my opening comments that we would see the probability of the forecast being higher than what we have estimated.

There is potential for that if these programs are not implemented to encourage this fuel substitution.

Q.92 - Referring to DNR-16 which is in volume 2 of NB Power 1 at page 130, this deals with the projections in 1990 which indicated there was a margin of error of 13 percent for energy supply and 12.7 percent for peak hour demand.

If the load forecasts that are now under consideration for 2000 to 2010 are plus or minus 13 percent, will NB Power's evidence at the specific hearings deal with the impact of this level of margin of error?

MR. MACPHERSON: We are -- we have indicated that we would do variance analysis on the load forecast. And we would be open to reasonable variance numbers in terms of that.

So having said that, I'm not saying it is outside the bounds. I mean, we would be open to that. If that is your question. In other words --

Q.93 - I am asking will they deal with an analysis that would

allow for a variance of 13 percent one way or the other at the specific hearings?

MR. MACPHERSON: We could do that.

Q.94 - And in that regard, would that 13 percent -- I believe you said at the time of 1990 that was within a reasonable limit for this type of analysis.

Would 13 percent be a reasonable limit for an analysis in 2001?

MR. MACPHERSON: Certainly it wouldn't be out of bounds to use that as a variance, I don't think.

Q.95 - No? Have any steps been taken to improve the accuracy of this forecast over the 1990 forecast? And you may defer to any of your panel members.

MR. MACPHERSON: I will ask Mr. Bhutani to respond to that.

MR. BHUTANI: I think the first thing I would like to say on that, Mr. Hyslop, is that yes, every year as we try to understand our loads, we get a better understanding of what causes the loads to change.

And so we hopefully have been improving upon the load forecast. We continually monitor the model that we have to see if the model can be more efficient.

And I guess I could go on to say that I feel in my own mind that the forecasts today are better than they were 10 years ago, just because we have a better understanding of the loads and what causes the load to change.

Q.96 - Your forecasts allow for the fact that aggressive positions have been made for the impact of natural gas and self-generation.

And it goes on to -- and again this is at the bottom of DNR-16, that the actual loads would be higher than as presented in appendix C.

This invites the question are we comfortable with appendix C as an accurate document in view of this statement?

MR. BHUTANI: One of the great things about this process is when we were preparing for the process we had to go through every little detail to make sure numbers did add up.

And you are right. We did find one error, one mistake in there. But that also makes me comfortable that yes, there are no other mistakes in the document.

Q.97 - Perhaps there may be no other mistake in the document. But again you have said to me in DNR-16 "It is probably more likely that the actual loads would be higher than the load forecast presented in appendix C."

So again does that suggest that appendix C should again be revisited before the final proposal is put before this Board?

MR. MACPHERSON: With respect to our approach to looking at the areas of gas penetration both from the end use heating

area and from the self-generation by industry area, we were concerned in making sure that we were trying to take advantage of all natural gas opportunities that we felt there were in the province in terms of being able to reduce the load that we had to supply, in other words the load that NB Power had to supply under its obligation to serve.

We recognize however that, in our view anyway, if anything, the probability is that the load will be higher than that. Now we think all of this is conservative in terms of reviewing any potential project.

In other words if we are looking at a project like Coleson Cove or its replacement energy, we feel that we are looking at a minimum requirement in terms of capacity that NB Power is going to have to provide. So we you can say consciously have taken a very conservative approach here. I guess you may say that.

By the same token we think it is plausible given the opportunities to move in this direction, but it is not going to happen by itself. It is going to require incentives and the right economic environment for these things to happen.

Q.98 - With respect to NBP number 7 which is one of the documents submitted this morning -- I'm looking particularly at page 11 -- I have discussed with you

briefly some of the issues on the demand side and demand side management.

Would improvements in demand side management tend to make this forecast high, and should that be added as a factor to your conclusion?

MR. BHUTANI: It could be added. I don't think it would be a significant factor.

Q.99 - I'm sorry?

MR. BHUTANI: I do not expect it to be a significant factor.

Q.100 - I would like to ask a few questions about the new transmission connections with the New England market. And I understand there are two such new transmission vehicles being considered?

CHAIRMAN: Mr. Hyslop, I'm going to interrupt. Because I think this is a good time, since you have --

MR. HYSLOP: Yes, it is, to break.

CHAIRMAN: -- changed your questioning, take a break now. We will take 15 minutes.

It is the Board's intention to sit till about 5:00 o'clock. Thanks.

(Short Recess)

CHAIRMAN: By popular request we have asked the secretary to have the temperature raised in here by one degree celcius. Go ahead, Mr. Hyslop.

MR. HYSLOP: Is that an energy efficient measure. I just

want to know if they want to amend their load forecast, Mr. Chairman.

Q.101 - Thank you very much, Mr. Chairman. The next series of questions deals with the new transmission links to New England of which, if I understand correctly, there is two different projects under consideration, a land based system and something that has been referred to as the Neptune, is that correct?

MR. MACPHERSON: That's correct.

Q.102 - And specifically for the purposes of proceedings, can you advise the Board as to the status of each of those projects at this time?

MR. MACPHERSON: The land based line which is -- interconnects with NB Power's transmission system at Lepreau and is land based from there to just outside Bangor, has been filed -- the New Brunswick portion has been filed with the National Energy Board, and the permitting process is -- they are anticipating in the U.S. completion of that permitting process this summer.

Subsequent to that it's a matter of finalizing a tariff on that line and the mechanism by which capacity will be optioned on that line.

Q.103 - And is there any time lines for the completion of the entire process with regard to the land based line?

MR. MACPHERSON: Our present schedule will see the line

completed in the summer of 2003.

CHAIRMAN: Could I interrupt for a second, Mr. Hyslop. Is that the right-of-way that you are cutting now from Ozzie's west?

MR. MACPHERSON: I don't believe so. And I don't -- and I know where Ozzie's is, unless that's in Australia.

CHAIRMAN: That's exactly why I ask the question, you see. It's where you get the best fried clams in the world. And that's about four and a half kilometres west of St. George on number 1, the mouth of the Digdeguash River, et cetera. Being a Charlotte County boy I had to bring that up.

MR. MACPHERSON: We are -- just to respond to that and this may be -- we are building additional transmission facilities in that area right at the present time to strengthen the transmission primarily as it applies to the Flakeboard operation down there. So that may be the line you are talking about.

Q.104 - Thank you, Mr. Chairman. With respect to the land based line, the filings with the National Energy Board, are they preliminary or are they detailed filings?

MR. MACPHERSON: Could we refer that to the panel tomorrow when we talk about some of the regulatory issues, if you don't mind. Mr. Little will be on the panel then and he is intimately familiar with the status and the filing in that regard.

Q.105 - Very well. And I have no objection to that. With regard to the Neptune line again, I will defer on the question of filings to Mr. Little, would that be proper?

MR. MACPHERSON: No, that's fine. First off all the filings associated with that are the responsibility of Atlantic Energy Partners who are the group that are the proponents of that undersea cable.

They have filed with the federal energy regulatory commission in the U.S. both the project and the proposed tariff.

As part of the tariff their proposal is to hold an open season on that -- for capacity on that line, that open season to commence the 10th of September and run for 60 days.

And those who would wish to book capacity on that line in that open season period would have to indicate the quantity they want to book, the duration or term of the contract and the price they are prepared to pay.

So that is a merchant transmission facility that they are proposing and it would be subsequent to that, which I guess would be somewhere in the middle -- somewhere around November -- in November -- that they would then be able to make a decision as to whether or not the New Brunswick to New York leg could be financed based on contracts for the capacity.

Q.106 - With regard to these two new transmission lines and the potential refurbishment of Coleson Cove, I understand at present that Coleson Cove a swing or an intermediate power facility, correct?

MR. MACPHERSON: That's correct. Coleson Cove is our intermediate generator. We dispatch all of our generation based on costs and it is in that intermediate level by virtue of its higher cost of fuel.

Q.107 - And my question is what effect is the placement of these two new transmission lines likely to have on Coleson Cove? Is it a potential of it becoming a base load plant?

MR. MACPHERSON: There is potential that with the plan that we have on Coleson Cove that it could become -- we generally refer to base load in terms of capacity or generation that's loaded to supply base capacity for in-province use. But if you are looking at a higher capacity load factor of that plant, that's the case. We still wouldn't refer to it as base by virtue of the fact it doesn't supply in-province load totally, but it would be -- operate similarly to a base loaded plant in New Brunswick, yes.

Q.108 - And perhaps just for further clarification, it would run on a more full-time basis with the potential of the extra power being generated -- being transmitted to the New England market possibly through these two new

transmission lines?

MR. MACPHERSON: That's correct. If those lines were to be built there would be more opportunity to do that, yes.

Q.109 - And during the specific hearings on the refurbishing of Coleson Cove would it be expected and intended by NB Power to produce evidence as to the increase in the emissions that would result from Coleson Cove being so used?

MR. MACPHERSON: We would be presenting all of the emissions numbers for Coleson Cove with and without these export amounts.

I would say though at this time that this project would see under any scenario reduced emissions from Coleson Cove beyond what it is today.

However, we would provide, based on different scenarios, and as we said we would have different levels of load forecast as well, and based on those different scenarios we would analyze the emissions in each case, that's correct.

Q.110 - So the environmental impact as it were for the additional capacity being used to sell in the New England market, that evidence would be presented to the board in the refurbishing hearing?

MR. MACPHERSON: That's correct.

Q.111 - Move on to a question or two about Point Lepreau. As

to the alternatives with regard to this project I would assume that there would be certain costs if NB Power were to not refurbish Point Lepreau but in fact shut it down as one of the alternatives?

MR. MACPHERSON: That's correct.

Q.112 - And will evidence be presented at the specific hearing dealing with the Point Lepreau application to set out what costs and ongoing costs would be incurred as a result of such a shutdown?

MR. MACPHERSON: That's correct.

Q.113 - If Point Lepreau were to be refurbished I assume that there would be a time period when it would not be in production.

MR. MACPHERSON: That's correct.

Q.114 - Would you have some estimate of what that time would normally be?

MR. MACPHERSON: The current estimate is an 18 month time period where it would be out of service, and that would go through one system peak on our system -- one winter peak.

Q.115 - I see. In that regard I would assume that there would be no power being produced at Point Lepreau and you would have to find other sources of electricity?

MR. MACPHERSON: That's correct. We have however -- if you look at our load resource -- our load profile during the year, in the summertime our load is a thousand to 1,200

megawatts less than it is in the peak in the winter. Therefore we can certain times of the year supply it from in-province resources. Other times of the year, in the winter peak system, we would have to get supply from other sources, such as purchases.

Q.116 - And would there be evidence presented at a specific hearing that would outline the additional cost of providing the electricity during the shut down period?

MR. MACPHERSON: That's correct. It would be.

Q.117 - And dealing specifically again with these costs, what way would be the proposed methodology for the accounting treatment, or would this be a question better left with Mr. Little?

MR. MACPHERSON: The accounting treatment you are considering, you are talking now of the issue of this replacement fuel during the --

Q.118 - That's correct.

MR. MACPHERSON: -- or replacement energy?

Q.119 - Yes, that's correct.

MR. MACPHERSON: Our current thoughts is that, and I think it was in the evidence, that they would be expensed.

Q.120 - As part of the evidence with regard to a refurbishing hearing on Point Lepreau, would the issue -- would there be evidence led as to the impact on overall CO2 emissions of not refurbishing Point Lepreau?

MR. MACPHERSON: Yes, there would. Just to give you -- how we would see this working, we would be analyzing all the different alternatives and the alternatives to Lepreau would have the emissions impact as a result of that.

Q.121 - I refer you to CCNB supplemental number 17 which is page 26.

CHAIRMAN: Volume 2?

MR. HYSLOP: Yes, it is. Volume 3 perhaps. Volume 4.

CHAIRMAN: Exhibit 4. Conservation Council.

MR. HYSLOP: I'm sorry, Mr. Chairman. I apologize.

CHAIRMAN: Conservation Council. Which?

MR. HYSLOP: CCNB-17.

CHAIRMAN: Supplemental?

MR. HYSLOP: Supplemental, yes.

CHAIRMAN: Good. Thank you. All right.

MR. HYSLOP: And in particular in reference to the issue, there is a reference that the capital costs per kilowatt hour to construct would -- a combined, gas combined cycle plant would be $950 per kilowatt.

Q.122 - Does NB Power have any cost quotes to support this particular amount? And how did you come to it?

MR. MACPHERSON: We have a number of estimates and we have -- we have devised these off of specific projects that we have been involved in in terms of estimates, and some with respect to actual -- to our actual projects.

Now this is -- these costs are what we refer to as a green field cost. In other words, there is basically no infrastructure there. And it's total cost of the project.

So we have taken some of the costs that we have incurred and added in some of the facilities that have been in place. And that is really where that cost comes from. It is an estimate more than anything. But we have been dealing with a number of different developers and we consider it to be in the right ball park.

Q.123 - Do these cost comparisons include the environmental cost for scrubbers for such a facility?

MR. MACPHERSON: There is scrubbers used to capture SO2 emissions. There are basically no SO2 emissions associated with combined cycle natural gas-fired power plants. They do not include any SCR for NOx control in those numbers either.

Q.124 - Will the evidence or will the estimates in evidence that you referred to be part of the evidence that you put forward before this Board in a specific hearing?

MR. MACPHERSON: We will be putting forth estimates on all the different options and firming these up, yes. That's correct.

Q.125 - Thank you very much. Finally dealing with the issue -- and refer particularly to volume 1 of the evidence and in particular Mr. Marshall's evidence at page 20 where it

is stated that "NB Power and other Canadian utilities believe that the climate change has global impacts and that attacking the problem with regional, provincial and industry-specific reduction targets is not appropriate. Such a strategy is economically inefficient and will create regional disparities. Economically efficient CO2 reduction can only be achieved through national and international programs."

Am I to read into that, and perhaps you can correct me if I'm wrong, that NB Power's current policy on environmental issues is to comply with the existing standards?

MR. MARSHALL: Yes.

Q.126 - Yes. And has any alternatives been put forward? Or is it the intention of NB Power to put forward any alternatives at specific hearings which would involve exceeding current environmental standards?

MR. MARSHALL: Yes. Even in the evidence, the current standard on SO2 for example is we have a system-wide cap of 123,000 tons.

In discussions that we have had with Department of Environment and local government and licencing of Coleson Cove, we expect those standards to be reduced.

And so we are targeting reductions in SO2 to a 20 percent reduction -- 30 percent reduction and 50 percent

reductions over the period. So we have projections for standard as well.

Q.127 - And will some of these standards and the evidence you present also be provided so that you will be complying with future environmental standards as they come down the road, to the best that you can make a prognosis of those standards?

MR. MARSHALL: Our current -- we certainly will review that as we go forward to a project-specific hearing, yes.

Q.128 - Thank you.

MR. MACPHERSON: If I may just make one small comment. We run into issues here all the time within these environmental areas where we talk about exceeding standards.

And some people interpret that to mean you are not complying, you are above. In this case when we are talking exceeding, we are talking doing better. That is all.

MR. HYSLOP: My question was phrased within the context of doing better.

Thank you very much, Mr. Chairman. This completes the questioning for the Minister of Natural Resources.

CHAIRMAN: Thank you, Mr. Hyslop. Does Emera Incorporated have any questions?

MR. BLAMIRE: We have got no questions at this time.

CHAIRMAN: Thank you. Does Mr. Gillis have any questions?

MS. WOOD: No questions.

CHAIRMAN: Does Irving Oil have any questions?

MR. EARLE: No questions.

CHAIRMAN: Does J.D. Irving have any questions?

MR. WOLFE: We have no questions for this panel.

CHAIRMAN: Nova Scotia Power?

MR. WALLACE: No questions.

CHAIRMAN: I understand the Saint John Citizens Coalition is here this afternoon, is that correct?

MR. DALZELL: Yes. That is correct.

CHAIRMAN: And do you have any questions, sir?

MR. DALZELL: There is just the one, a clarification and a couple of questions, if we --

CHAIRMAN: Okay. You missed it this morning.

MR. DALZELL: Yes.

CHAIRMAN: But would you move up to what Mr. Barnett has -- the table Mr. Barnett is just vacating, for the purposes of the questions. Thank you. And when you get there would you put your name on the record, sir.

CROSS EXAMINATION BY MR. DALZELL:

MR. DALZELL: Yes. My name is Gordon Dalzell, the chairperson for the Saint John Citizens Coalition for Clean Air.

And we apologize for this morning but work conditions

prevented me from not being present. So we took some time this afternoon to come ask for some -- ask a few questions.

And also just to clarify. In respect to the argument for objections to one of our questions in number 6, there was an explanation on the nature of objection.

Unfortunately there was a typographical error in one of our written questions. And the Board attempted -- or NB Power attempted to answer it but didn't understand the question because of this typo error. I'm wondering if we --

CHAIRMAN: Could you refer us to the specific interrogatory you are referring to?

MR. DALZELL: It is referred to May 4th, 8:30 a.m., objection number 18, "argument for objection", NB Power and our group in number 6, "nature of objection." Do you want me to read it?

CHAIRMAN: But the interrogatory which is being referred to --

MR. DALZELL: Right.

CHAIRMAN: -- was which interrogatory that the Clean Air Coalition put to NB Power? Which one was it?

MR. DALZELL: Well I'm not sure exactly of the number. You have to excuse the fact that we are not -- community groups, like myself included, do not completely understand

protocols.

CHAIRMAN: I hear the panel mumbling 6 over here --

MR. DALZELL: Number 6.

CHAIRMAN: -- do I?

MR. DALZELL: Number 6. Yes.

CHAIRMAN: Number 6.

MR. DALZELL: There is the number 6 behind this, exactly.

MR. MACPHERSON: I believe it is on page 178.

MR. DALZELL: Yes. Okay. So basically I wonder if I could just for the record, to make sure that the question I asked was correct, and then the evidence later perhaps can be submitted, or perhaps somebody can answer it now.

Would it be permissible then for me to rephrase that question?

CHAIRMAN: Well, go ahead.

MR. DALZELL: Yes.

CHAIRMAN: Rephrase the question.

MR. DALZELL: Yes. Okay.

CHAIRMAN: And then we will see if this panel can help you.

Q.129 - Yes. Well, we hear in the community that the nuclear industry often cite nuclear power as the best option to prevent greenhouse gas emissions, for example in the open house NB Power had on this project in Saint John, as well as there won't be any emissions associated with fossil fuels like nitrogen oxides or SO2 particularly.

I guess the question I had is are these claims by the nuclear industry factually correct? And will the applicant present independent evidence to address this claim?

And specifically we would like to know how much emissions will be displaced if Point Lepreau is approved to be refurbished? And those -- the displacement of those emissions are nitrogen oxide particulate and -- those are the ones.

So basically we want to know what would be the displacement if Point Lepreau was to be refurbished that would prevent those emissions?

Perhaps at some point -- the nuclear industry gave us certain information about this. But we would like to have some independent evidence to answer that.

MR. MACPHERSON: Just initially the answer is -- in some of these -- and I will ask Mr. Marshall to deal with the actual numbers right today. We will deal with presenting evidence with respect to that at the particular project hearing.

And we will have -- as we said before, emissions for all of our different options will be identified. So you will be able to determine the difference between, as an example, refurbishing Point Lepreau versus any of the other options for replacement of that energy.

I will ask Mr. Marshall to deal with the areas of NOx, SO2, CO2 associated with generation other than if -- other than nuclear energy or other than Lepreau being refurbished. He can give you those numbers right now in rough form.

MR. MARSHALL: Yes. Just a quick estimate. Based on Point Lepreau operating at 4 to 4 1/2 terawatt hours a year, the CO2 versus a natural gas combined cycle project, if that is the displacement, would be in the order of 1.8 million tons of CO2.

If it was displacement versus an oil, coal type based project, would be in the order of 3 1/2 to 4,000,000 tons a year.

SO2, I don't have a really good number. But if it is against the current Coleson Cove type operation, probably in the order of 40' to 50,000 tons of SO2 a year.

If it is a scrubbed SO2 at .6 pounds per million BTU it is probably down in the order of 10,000 tons.

NOx, at the current emission level is probably about 10,000 tons per NOx. And we can get those specifically. That is general.

But we would present evidence at any future hearing specifically in terms of what the displacements are and what the source of displacement would be.

Q.130 - Thank you. I do have a few other questions.

CHAIRMAN: Okay. There is a second part to that. And I'm just trying to be helpful, so that you are not disappointed later.

But the second part is will the applicant present independent evidence? I presume that is independent other than the nuclear industry --

MR. DALZELL: Yes.

CHAIRMAN: -- to address this claim?

If I'm -- you know, if the panel wants to address that question as posed, go ahead.

MR. MACPHERSON: We will take it under advisement to present the most independent evidence that we can obtain.

Q.131 - Yes. That would be great. Thank you.

CHAIRMAN: And your other questions, Mr. Dalzell?

Q.132 - Yes. We have a couple of specific questions. Okay. On page 14 -- it is in respect to question 6 of the evidence of Mr. William Marshall, number 6. The statement is made there, "The plan that best meets the economic, environmental and financial is chosen."

Could you elaborate on the environmental criteria? What specific environmental criteria do you refer to in making that statement? Page 14, question 6.

MR. MARSHALL: The environmental criteria that we would utilize would be the environmental criteria laid out in questions 14 and 15.

We would, as was discussed just earlier with the Department of Natural Resources and Energy, for, as we see it today, for sulphur emissions our current limit is 123,000 tons. But discussions with Natural -- with the Department of Environment and Natural -- the local government, we expect a reduction of 30 percent by 2005 and about 50 percent by 2010. And in addition we expect to see a cap on Coleson Cove of 40,000 tons as a plant specific cap. So we would intend to meet those targets.

For NOx emissions, there are no specific caps yet for NOx. But there are negotiations and considerations with the New England Governors and Atlantic Eastern Canada Premiers for somewhere in the 30 to 50 percent reduction range. And we expect that we would -- we would target to meet those.

For Mercury emissions on page 18 of my evidence we have laid out the current -- New England Governors and the Eastern Canadian Premiers. And we would expect to meet those emissions on Mercury.

And again, we had discussed just after lunch with the Conservation Council where there is currently no specific targets for CO2 and CO2 is a more global issue, we would undertake to look at sensitivities on the cost of CO2 and where it would be and what effect it would have on projects. But we would look to a North American trading

system of some kind in allocation of caps in which we would look at that.

Q.133 - Thank you. And that led into my next question, refer to the trading in page 19 of the evidence Mr. William Marshall, line 22.

The refurbishment of Point Lepreau would be eligible for credits that would apply to other NB Power CO2 emission objectives or sold to other utilities.

And I guess the question -- and I guess the question about the future on the evidence, will there be evidence to provide on this whole trading -- emissions trading criteria, and will that be part of the mechanism or the instruments that you will be considering to meet these kind of objectives, the emissions trading and that whole complicated structure of emissions trading, will that be part of what you will present as evidence?

MR. MARSHALL: Well we have presented our position that we support with the Canadian Electrical Association proposal to the federal government.

And as there are other developments down that road towards trading systems and implementation, we would provide additional evidence on that in those areas.

Q.134 - And finally, sorry, I don't have the actual page number. But I know there are references there in the evidence about the new emission control technologies. The

scrubbers, for example, are referred to as part of Coleson Cove.

Could you or will you be providing evidence on this catalytic -- selective catalytic reduction system to the point where you will be able to elaborate the use of ammonia, for example, in that technology. And will the evidence include how the ammonia, which is going to be part of that technology in its processing, is going to be transported to the city and in the community? It's the issue around the ammonia in respect to the selective catalytic reduction technology that's being proposed.

MR. MACPHERSON: The short answer is yes, it will be part of the EIA process. So I don't believe it's a specific issue to be resolved here. But it is certainly something that would be presented with the project description as an example.

MR. DALZELL: Yes. I think that concludes at this point the questions that we had. And thank you for the opportunity to ask them.

CHAIRMAN: Thank you, Mr. Dalzell. Saint John Energy.

MS. COUGHLAN: We have no questions for this panel.

CHAIRMAN: Last but not least, Board Staff. Mr. MacNutt, do you want to stay where you are?

MR. MACNUTT: Yes, I will, Mr. Chairman.

CHAIRMAN: Okay. Maybe you can pull you mike in just a

little bit.

MR. MACNUTT: We will get organized here in a second.

CHAIRMAN: All right. Just take your time, thanks.

CROSS EXAMINATION BY MR. MACNUTT:

Q.135 - The first reference is New Brunswick -- exhibit, New Brunswick Power 3, Gillis information request 2 at page 154 of exhibit NB Power 3. I guess the question will be directed to Mr. MacPherson.

CHAIRMAN: Now that we all have the right binder, Mr. MacNutt, would you run that by again.

Q.136 - Gillis 2, which is at page 154. In the last paragraph of the NB Power response to Gillis IR2, the statement is made with respect to the risk that supply will not be available to meet demand during the forecast period. I quote, "It is the absence of electricity that is far more costly than the cost of electricity itself."

The paragraph concludes with the observation that the balance of risks should be weighted towards ensuring an adequate and competitive supply of electricity. "The very foundation of NB Power's mandate."

I'm going to ask how the risk of inadequate supply would be addressed by NB Power and its impact on the province given the following three assumptions.

(1) At the end of the year 2006 natural gas prices have been high for some time, therefore conversion of

residential and general service to natural gas has not occurred at the expected rate and very little of the 150 megawatt demand projected to be lost to industrial self-generation is in fact lost.

(2) As at the end of year 2006 NB Power had underestimated the demand for electricity by 10 percent. That is, the demand is 10 percent higher than projected at that date.

And (3) On or before the end of year 2006 Point Lepreau is in fact shut down due to mechanical failure.

Now to the question. As at the end of the year 2006, (a) would the NB Power system have capacity to provide an adequate supply of electricity to meet the domestic New Brunswick demand? And then I have two following that. But perhaps we can address that one now.

MR. MACPHERSON: If I understand correctly, both scenario 1 and scenario 2 would result in higher loads on NB Power's system. Am I correct in that?

Q.137 - Yes.

MR. MACPHERSON: Okay. The issue associated with that -- first off, let's understand what the implications are if that occurs. If the load is higher than what we have anticipated, then we would not have sufficient capacity to meet that load obviously.

We would then have to purchase that energy. We

have -- the purchase options that we have are resources in the province, are limited resources outside the province from Quebec or Nova Scotia, and if we build a second tie, then we have potential for resources from New England.

So from the point of view of reliability we would have to purchase the energy in order to keep the -- provide our -- to meet the reliability requirement.

The risk associated with that obviously is the price impact associated with purchasing this energy at much higher than what our existing rates that we are charging for generation in the province.

The shutdown of Lepreau, give you a little flavour in terms of where that project stands. The Hagler-Bailie study that was done in 1998 recommended that NB Power prepare to either refurbish that -- put a plan in place to refurbish that plant between the years 2008 and 2011.

We have chosen to have our plans in place such that we could refurbish that plant in 2006. We have considered that to be prudent to have those plans in place by virtue of the fact that the risk of being late with our plans would outweigh the benefit that the -- would outweigh the costs of being ready early in order to be able to do that.

However, given that, if the plant was out of service in 2006, prior to 2006 shall we say, then the issue then is being able to purchase energy from outside sources in

order to be able to supply that load.

We have -- we have indicated here that we will continue to be vigilant with respect to how load is increasing on our system with respect to our capacity. We have a number of supply options that we could implement within the province in a fairly short two to three year time frame if that became the -- if that became required in order to meet this -- that demand.

I'm not sure that -- that gives you a flavour in terms of how we would cope with it from an operational point of view. In other words, if the load is higher than what we had anticipated, we would have to -- we would envisage having to buy those excess capacity.

If we cannot do that by virtue of the fact that additional transmission lines don't end up getting built, then we would have to look at shorter term capacity additions in order to meet it.

Mr. Marshall has some numbers here that he can use to quantify that.

MR. MARSHALL: You raised three assumptions by the end of 2006. That gas prices were high so we didn't get the gas, electricity substitution. That would be about 200 megawatts. That the 150 megawatts of self-generation didn't occurs. That's 150 megawatts. That the load forecast was about 10 percent higher. That's roughly 350

megawatts. And with Point Lepreau down, under our current load resource as provided in evidence on page 33, at the end of 2006 for January 2007 we are short 304 megawatts.

So when you add those all up under your scenario we are short about a thousand megawatts. So would it be adequate to supply, no.

Q.138 - How would NB Power deal with that demand in light of that shortfall at that time?

MR. MACPHERSON: As I say, we don't -- we wouldn't anticipate those three -- those three variances happening all at once.

We would have to -- and we did indicate in here that we were going to continue to monitor the situation to determine whether or not just maintaining our existing capacity was going to be adequate.

If it is not the case then we would have to look at additional capacity in order to be able to supply that, and obviously it would have to be rather -- capacity that could be put in place in a relatively short time frame.

And we have a number of options you will see when we are presenting the refurbishment of the -- both the Coleson Cove and Lepreau. You will see the options that we have available to us in order to provide -- not only to replace that capacity, but if the need was required in order to -- those options could be used to provide

additional capacity on our system.

Q.139 - Yes. You have just identified in your earlier answer and again confirmed in the answer you have just given now, that there are two supply options. Could you just identify those for us, please?

MR. MACPHERSON: The supply options that we have available to us right at the present time are additional gas-fired generation in New Brunswick, and we would be looking at some of the existing facilities that we have in order to be able to provide that.

The prime locations that we have today are the Courtenay Bay plant, there is additional capacity to build additional generation there, the Grand Lake plant which would be a re-powering to gas that we have looked at fairly extensively. Those are the two most attractive options that we have for providing additional capacity on our system at the present time.

As was indicated I believe by Mr. Marshall a little while ago, we are looking at feasibility of wind generation in New Brunswick. However, that would be small amounts of additional capacity compared to the levels of additional capacity you would need if those three scenarios were to come to pass.

Q.140 - Now I guess I have got an extra question, so I will go to question 3 now. Assuming the three assumptions all

occur at the same time, what would the impact be on NB Power and its customers both in the short-term and in the long-term of such an event?

You might say the question is oriented on the impact on the customer as opposed to NB Power.

MR. MACPHERSON: The bottom line is that we would have -- we would lose -- either lose capacity or load would grow to the tune of about a thousand megawatt deficient is what Mr. Marshall has indicated.

Roughly if we were to -- based on today's prices if we were to provide natural gas generation to supply that we would be looking at somewhere in the range of six and a half cents a kilowatt hour as we filed in our evidence, six and a half cents per kilowatt hour for that type of generation. And it would have a resultant financial impact that I guess we could figure out just exactly -- roughly what we think that impact would be, but -- if you wish.

MR. MARSHALL: The impact may be more -- the six and a half cents is a guess cost at high load factor. The load factor of the replacement capacity may vary depending upon the needs so that the actual energy costs could be higher.

Considering our current generation costs in the order of five cents, it would increase the cost of supply to customer in New Brunswick.

Q.141 - Final question in this scenario. Specifically why is it that NB Power has stated at page 154, "It is the absence of electricity that is far more costly than the cost of electricity itself"?

MR. MACPHERSON: We draw that conclusion in terms of -- if I could just give you a bit of an analysis of the particular numbers with respect to the electric intensity in New Brunswick compared to some other jurisdictions.

In New Brunswick there is approximately -- there is very close to one kilowatt hour per dollar of GDP in New Brunswick, which is very high.

If you look at -- let's look at another jurisdiction like California on the other extreme. It's an order of magnitude lower with respect to its impact on the economy of the state, and we see the significant disruptions that occur there and they impact on the economy as a result of the absence of electricity over certain periods of time.

We consider that given the electric intensity of New Brunswick, which is the second highest province in Canada, which is 50 percent higher than the average for Canada, that the impact would be significant.

Now the real reason for the impact here is that we have such a high percentage of electric heat in New Brunswick and we have such a high proportion of our load which is resource based industries in the province.

And it's that -- it's those factors that in our view indicate that the impact would be significant of not having enough capacity to meet the requirements in the province.

Q.142 - Did you have something to add, Mr. Marshall?

MR. MARSHALL: No.

Q.143 - I would like to go on to the second question, setting aside that scenario for a moment.

This would be exhibit NB Power 1, Appendix C, which is the load forecast 2002 to 2011, and at page 86 deals with forecast variations, and it would be directed to Mr. Bhutani.

I will just run through that again. That would be exhibit NB Power 1, Mr. Bhutani's evidence at page 86, specific reference to section 3.1 of Mr. Bhutani's forecast.

The evidence is that "Weather adjustments to historical energy supply are made based on a 30 year average of heating degree days in each month", it is further stated that "minus 24 degrees Celsius is the average temperature experienced for peak demands since 1976".

Questions, (a) which years were considered in the 30 year period used in the average determination, and, if this period does not include the period from 1991 to 2000,

please explain why?

MR. BHUTANI: The 30 year average that we use in the forecast is provided by Environment Canada, and that number is updated once every ten years. The period that we have used so far is 1961 to 1990.

The update which will take away the decade of 60s and add the decade of 90s will be available I believe later on this year or perhaps early next year, the 30 year average.

Q.144 - Have you made any independent investigation or establishment of the data for that ten year period, that is, the 90s?

MR. BHUTANI: Yes, sir, we have. In the 90s for example the average degree days in the decade of 90s was approximately 110 below what we call the 30 year average. That's 110 out of 5,000. In a normal year there is -- 30 year average is 4,990 degree days.

In the decade of 90s it was I believe 110 or so less than 4,990 30 year average. Another way to put it would be that the 90s were approximately two percent warmer than the 30 year average that we have been using in this forecast.

Q.145 - And in your forecast did you use that two percent warmer impact figure or did you simply use the Environment Canada 30 year without adjustment?

MR. BHUTANI: Our forecast is based on the 1961 to 1990.

It's a 30 year average without any adjustment for the effect of 90s.

Q.146 - Okay. You said about the -- your examination of the period of the 90s indicated two percent warmer, but that is not included in the forecast which is in evidence, is that correct?

MR. BHUTANI: That is correct.

Q.147 - Can you give us an overview of what the impact on your forecast would be using the two percent warmer figure for the 90s?

MR. BHUTANI: Yes, I can. I have to make an assumption here. The 60s, which I don't have the data for -- when you do a 30 year average the 60s would be taken out and 90s would be added.

But I can give you an estimate. If the weather conditions of the 90s were added and 60s were removed for a 30 year average, and I am assuming the 60s were so-called average weather conditions here -- let me just do this another way.

Each degree day impacts our sales by approximately one gigawatt hour in the winter months. The effect is much smaller in the summer months or the spring months.

But if we take that extreme and we say we lost 110 degree days in the winter months the impact on an annual basis would be 110 gigawatt hours out of a total supply of

15,300 gigawatt hours that we have in the forecast.

Q.148 - What would be the impact on a peak day in terms of megawatts?

MR. BHUTANI: The peak forecast is based on the temperature preceding the peak. It is not dependent on the degree days in a year.

We have no evidence at this point that the coldest conditions in the 90s were any different than the coldest conditions in the 60s or 70s. That means the accumulated weather over the period of 90s was somewhat warmer. It does not mean that the temperature on one particular day was not as cold as it was in the 60s or 70s or 80s.

MR. MACNUTT: Exhibit NB Power 1, which will be appendix B load and resources review at page 29, and the last paragraph on the page. Again, NB Power 1, page 29, the last paragraph on that page.

CHAIRMAN: You have lost me, Mr. MacNutt. Try again.

MR. MACNUTT: Excuse me. NB Power 1, exhibit 1, which is -- and it will be at page 29, which is a part of the load and resources review. It is one of the pages in the load and resources review. Oh, I'm sorry, Mr. Chairman, that will be the -- page 29 is the lower right-hand number.

CHAIRMAN: Right. Got it.

MR. MACNUTT: In the total thing. The heading is Load and Resources Review, the first paragraph, Every year NB Power

system.

CHAIRMAN: Thank you.

MR. MACNUTT: In its prefiled evidence on page 29 of the load and resources review, NB Power states that "The actual timing for retirement of any unit is dependent upon studies to determine the economic value of its production compared to its O&M and fuel costs. This is the case of Point Lepreau facility which has an end life date of 2006 based on studies conducted by Hagler Bailie."

Questions. 1) does NB Power have a precise date in 2006 when they would shut down Point Lepreau?

MR. MARSHALL: Our projected date would be to run through the winter of 2005/6 and shut it down in the spring, in the April period.

Q.149 - Now do the studies conducted by Hagler Bailie provide a finite date for the retirement of the existing Point Lepreau facility or do they suggest a range?

MR. MARSHALL: I believe they suggested a range. We are looking at 2006 to 2010 and had sort of estimated 2008 at that point. Since I think there has been a subsequent letter from them, a range, but that's the range. Based on tests and information at the plant and our preparation, 2006 is now the date that we see reasonable in order to do refurbishment.

Q.150 - The date of 2006, particularly April, that is a date

selected by NB Power as a result of interpreting the Hagler Bailie information or it is a date suggested by Hagler Bailie?

MR. MARSHALL: No. The actual April date would be one that we would select. If we are going to go forward with the refurbishment we want to get it done in the 18 months that is projected and we would -- it's the date to be what's the most economic date, you get through one winter, you start in the spring and you are only out for two summers and one winter, so that you are available then for the winter of 2008 when you come back around. So that's why it's -- the April date is chosen.

Q.151 - How did NB Power decide on the date of April 2006 to shut down Lepreau?

MR. MACPHERSON: Just to give you a little background here, the Hagler Bailie study was done in '98. It recommended that between the years of 2008 and 2011 we should look at refurbishing the plant. We then looked at it from the point of view of making sure that -- and they also recommended that we start planning with respect to that refurbishment.

We started. And we have been going through a two year period to determine the condition assessment of the plant and we consider it at this time to be prudent to initiate the refurbishment in 2006.

The existing process we are on though with respect to the condition assessment of the plant will ultimately dictate exactly the date that we will go forward with, but at the present time it looks like 2006 to us.

It is a date that subsequent to Hagler Bailie study we worked with them to say -- and it was their feeling as well as ours that we should err on the side of being prepared to take the interruption on that plant earlier rather than later.

Q.152 - And the final question on this topic. What consideration has NB Power given to carrying out sufficient work on the Point Lepreau generating facility not being a total refurbishment so as to delay the end life of the facility by two years to the end of 2008 so that a proper review of the impact of the energy policy white paper can be examined by reference to events arising out of its implementation?

MR. MACPHERSON: The summary that we -- that we concluded in our responses to the interrogatories, we included the summary of the Hagler Bailie report. If you look at that summary it indicates --

CHAIRMAN: If I can interrupt just a sec. We are dependant upon the Delta's sound system and the technician has just gone that way so it's down, so if you would just speak up so people in the back of the room can hear your response,

Mr. MacPherson and Mr. MacNutt. Thanks.

MR. MACPHERSON: Okay. As a result of the interrogatories, we filed an executive summary of the Hagler Bailie report. If you look at that report it indicates that the life limiting factor on the plant is the pressure tubes. And two factors on the pressure tubes and I will -- once I get through telling you, that's as far as I can go on it because I don't understand it all that much. But it's -- it has to do with deuterium pick up on the tubes and it has to do with their close proximity to the calandria tubes which could cause blistering. All of that to say that it results in failure of those pressure tubes.

Now in order to extend the life the -- beyond those years, the implication would be that you would have to replace periodically numbers of those pressure tubes one, two, three, four at a time as opposed to replacing them all. And that becomes an economic issue with respect to the length of time you would have to be shut down in order to replace these tubes on a one or two or three per year basis as opposed to shutting down to replace them all at once. So it becomes an economic issue associated with the actual extension of the life of that plant.

So it comes to a point in time where you are out of service so long and the -- it's too costly to operate it, so that's really what drives you to taking the outage and

replacing all the pressure tubes at once as opposed to doing it periodically.

Q.153 - Again, exhibit NB Power 1 at page 113. And also exhibit NB Power 3 at page 100, which is the response to CCNB 39. So there is two references NB --

CHAIRMAN: The second reference, Mr. MacNutt -- a little louder please, we can't hear you.

MR. MACNUTT: CCNB 39, which is at page 100 of exhibit NB Power 3.

CHAIRMAN: What interrog is that?

MR. MACNUTT: CCNB 39.

CHAIRMAN: 39. Thank you.

MR. MACPHERSON: That interrogatory refers to Mr. Little's evidence. If we could wait until the panel -- the subsequent panel, where he will be able to speak to it.

Q.154 - Well, yes, originated with Mr. Little. In other words, the question was asked arising out of Mr. Little's pre-filed evidence, page 113, but I think this panel can better answer the question that we are going to ask with respect to that response.

CHAIRMAN: Can't hear you, Mr. MacNutt. Sorry.

MR. MACNUTT: Yes, Mr. Chairman, I will get into full voice here if you wish.

Q.155 - The preamble is that statements are made that NB Power has a tax advantage as a Crown utility, which results in a

lower price to its customers.

In the response to CCNB 39, it is stated that the tax advantage is the largest contributor to reduced rates brought about by NB Power being a Crown utility. As well, that tax advantage when combined with certain other advantages listed there, result in the New Brunswick customer rates being lowered by one percent to five percent.

Now the first question is I assume that each of you gentlemen have read the Province of New Brunswick's White Paper on energy, have you? It's not in evidence here, so I am not going to quote you exactly. I just want to know if you understand a particular reference.

You remember the statements in paragraph 3.1.3.4, page 20 of that White Paper with respect to levelling the playing field? I just wonder if you know -- you remember that provision generally?

MR. MACPHERSON: Yes, I do.

Q.156 - Assuming NB Power remains a Crown utility, what will happen if the playing field, so-called, is levelled by imposition -- imposing taxation on NB Power or NB Power is required to make payments in lieu of taxes, or some other levelling payment is required of NB Power, what would the impact be on NB Power's competitive position in the generation markets in that event?

MR. MACPHERSON: Mr. Little is -- this is an area that he is prepared to deal with tomorrow, and he could give you a much better answer than I -- than we could here, if you are prepared to wait for that.

Q.157 - I am a little bit constrained in that tomorrow is to be evidence with -- well, panel number 2 is to be directed to evidence which you will give with respect to project specific hearing.

MR. HASHEY: We would have no problem with that being directed to Mr. Little.

Q.158 - Suggest that Mr. Little answer the question?

MR. MACPHERSON: Sure.

MR. MACNUTT: Could he be sworn and answer the question directly here today, because it relates to issue 1 matters?

CHAIRMAN: Why is it Board Staff has to do this to me? Mr. Hashey, does the applicant have any problem with that?

MR. HASHEY: No, I have no problem with that.

CHAIRMAN: If he could go up to the table and the secretary is off doing other duties, so I will swear him in.

KENNETH LITTLE, having been duly sworn, testified as follows:

Q.159 - Just as further background as to why we consider it appropriate for this panel or question at this time, the real question is has the impact of levelling the playing

field so-called, as announced in the White Paper, been reflected in the load forecast?

And then we have those particular questions, what would the impact be on NB Power's competitive position in the generation market? And perhaps we would have Mr. Little to answer that now that he has been sworn and is a part of panel one?

MR. LITTLE: That's a multi-part question. Forgive me, if I might start by saying that my recollection of the way it's in the White Paper, the discussion of the levelized playing field is in specific reference to new generation.

Please correct me if I am wrong there.

Q.160 - I don't see a particular reference to new generation, Mr. Little, but --

CHAIRMAN: Why don't we let the witness take a look at the energy policy. We have sprung this on him. And take whatever time you need, Mr. Little.

MR. HASHEY: Mr. Chairman, we have gone to get a copy of the White Paper.

MR. HYSLOP: Mr. Chairman, I believe it's at page 20 of the White Paper.

CHAIRMAN: Well certainly you would be closest to the drafter.

MR. LITTLE: Mr. MacNutt, I guess the reason I believed it was referring to new generation is halfway through the

paragraph it talks about that section.

There is a statement that says, "Therefore if the Crown utility is free to develop new generation projects in New Brunswick, it may be able to do so at a lower cost than its competitors."

That is why I thought this level playing field discussion was with respect to new generation.

Q.161 - Yes. And I would have to agree with you, because there is no self -- very limited self-generation now.

MR. LITTLE: So why don't we address your question maybe in several pieces, and perhaps we can get everything clarified.

Q.162 - Yes. First, what would the impact be on NB Power's competitive position in the generation market?

MR. LITTLE: Are we speaking of the export market, or are you talking about the emerging wholesale competitive market in New Brunswick?

Q.163 - In New Brunswick?

MR. LITTLE: The competitive energy market will be driven off marginal costs to the competitors. NB Power as a competitor, which owns existing generation resources, my presumption is that we will sell energy in any market, as long as we can recover the marginal cost of doing so.

We do that every day in the export market. I would expect that we do it in this market. So it would have no

impact in the short run.

Q.164 - So what you are telling me, this would -- the impact of levelling field payments would not cause you to revise your estimate of 150 megawatts onsite generation in New Brunswick?

MR. LITTLE: The estimate of the 150 megawatts of self-generation is predominantly driven by the economics of the party that might build the generation.

I wouldn't see it impacting the competitive market position for -- vis-à-vis NB Power's supply. It would potentially have a rate impact if our costs were increased by an imposition of a tax.

So the cost-based rates I would presume might be impacted by such a thing.

But in terms of the ability of NB Power generators to compete in the -- whatever form the energy market takes, I am not sure that it would have an impact.

Q.165 - And if the fees are imposed, who would pay the increased cost that would result?

MR. LITTLE: It would either reduce NB Power's net income or customers would pay.

Q.166 - Would this make the production of independent power generation in New Brunswick more attractive if the fees were imposed?

MR. LITTLE: Potentially. I say potentially, if cost-based

rates were increased as a result of it, then it might -- there might be more of an inducement to self-generate. The bar would be raised.

Q.167 - And has any of this been factored into your load forecasts?

MR. BHUTANI: I would like to respond to that by explaining, you are talking a one to five percent increase in rates over the period of time for the new generation.

So you are really talking about a very minimal increase in the rates that the ratepayers of this province will pay. If the one to five percent effect of the level playing field applies to the new generation, the impact on the combined existing and new generation will be much less so. And I don't believe a change of that magnitude in the price that New Brunswickers pay will impact the load forecast whatsoever.

Q.168 - Thank you. I now ask you to turn to exhibit NB Power 3, which is the responses -- the volume containing responses to the IR's. Particularly PUB IR8 at page 16, lower right-hand corner.

MR. MACPHERSON: Could we have that reference again?

Q.169 - I will repeat. NB Power 3, PUB IR8, at page 16. NB Power's response to PUB 8(e) indicates that customers can convert load to surplus energy if they agree to defer self-generation by at least three years.

Question, does this line up with the goal of encouraging non utility generation capacity additions? And there is a follow up question.

I don't mind which of the panel members respond. Can you --

MR. MACPHERSON: I'm trying to find the reference, what page is it?

CHAIRMAN: What interrogatory is it, Mr. MacNutt. It's the Board Staff interrog of the Power Corp?

MR. MACNUTT: Correct.

CHAIRMAN: Numbered what?

MR. MACNUTT: 8, which is at page 16.

CHAIRMAN: 8, 16, all right.

MR. MACNUTT: And we are looking at PUB 8(e) -- particularly.

CHAIRMAN: Pardon me?

MR. MACNUTT: There are --

CHAIRMAN: You are looking at question (a) particularly?

Q.170 - Questions (a), (b), (c), (d) and (e). And we are looking at question (e) which is on page 17. I guess I'm misleading you.

CHAIRMAN: -- Yes. Okay.

MR. MACPHERSON: The answer to your question there is it can. Right to date there is no -- there are no rules in place for industrial customers to be able to make that

decision as to whether or not they are going to self generate.

This is a reasonable time frame to deal with that, for them to make a decision as to what they are going to do. And it will be subsequent to some rules being put in place by the market design committee as to how the market is going to operate.

The other feature of this is it gives the ability to take surplus energy at time of use rates, all of which obviates the requirement for industrial customers to contract for firm load. So in that context it is -- it gives them more flexibility such that down the road they will be able to take advantage of the market as it opens.

Q.171 - Now when NB Power -- when NB Power in its calculation of 150 megawatts of possible self-generation, has it in any way taken into consideration the fact that certain of its large industrial customers have contractual arrangements with NB Power that would prevent them from going to self-generation?

MR. MACPHERSON: That has been taken into consideration in terms of the -- the analysis that we did. And there are -- there is a very minimum in terms of industrial customers that can't take advantage of that as a result of the contracts that they have with us. In fact, to be precise, there is only one customer that has decided to take -- to

make contractual commitments that would -- would reduce those options. But all of the rest of them have the options available to them.

Sorry, I have just been corrected. There are two customers.

Q.172 - I'm going to switch to another topic, and I don't have the reference because I don't know if it is referred to in your prefiled evidence. But it has been referred to in some answers arising out of some questions and answers given here today, and that is to time of use.

Does your load forecast include a time of use adjustment to reflect the introduction of it which you previously mentioned? That is you previously mentioned the introduction of it.

MR. BHUTANI: You are not talking just industrial time of use rate that we had been talking about earlier. Are you -- are you alluding to the time of use rates that we have implemented in the industry or the introduction of new time?

Q.173 - Yes, as a starting point.

MR. BHUTANI: Yes, the load forecasts reflect any load shifting that may arise out of the -- out of the time of use rate option that has been implemented for industry.

Q.174 - And does that apply to all classes of customers or is it confined to certain classes?

MR. BHUTANI: At this point we do not have time of use rates for other rate classes.

Q.175 - Do you anticipate having time of use class -- time of use rates during the ten year forecast period? And if so, over what period of time would they be implemented, and what would be the implementation date for each class?

MR. MACPHERSON: The provincial government energy policy requires us to file those with the Board in the fall of 2002, and that would be our intention.

And I might add, for time of use rates to be implemented there is one significant hurdle. And that is dealing with the metering of those accounts such that it can actually be implemented. So that's another issue that we will be dealing with prior to bringing our proposal before the Board.

Q.176 - Now has the impact we have just -- of your process going into this, has it been fully taken into account in your load forecast? And if not, why not?

MR. BHUTANI: Based on what I have drawn from other utility experiences, Mr. MacNutt, Nova Scotia being an example perhaps if I can use that. Nova Scotia has had time of use rates in place for about five years for residential rate class. And I understand over the five year period the total impact of the time of use rate has been a reduction of about seven megawatts on a 2,000 megawatt

system.

So -- and if we can draw upon experience like that, our thinking has been that when the time of use rates are introduced, unless there is something very dramatically different about New Brunswick compared to Nova Scotia, and I'm not sure what that might be, we do not anticipate a significant impact on the loads as a result of time of use rates. Because, as Mr. MacPherson pointed out, there are issues of cost of metering, there are issues related to investments in -- towards heating systems and so on that make it perhaps uneconomical to customers to -- to take advantage of such a rate.

Q.177 - So it would be fair to say that the impact has not been taken into account, but if you were to do so, it would be minimal. Is that -- would that be the short answer?

MR. BHUTANI: Yes. That would be my short answer.

Q.178 - Now I want to go to -- I just want to ask you a question with respect to the 153 megawatt interruptible arrangements, and it would be in NB Power exhibit 1, the table on page 33. That would be table 2 on page 33, exhibit NB Power 1. That's the original pre-filed evidence binder. And you will find by reference to line 2 on that table at page 33 a reference to non-firm industrial (curtailable surplus interruptible contract)

and for each year throughout the period 153.0 megawatts is listed.

Now that -- one assumes that the 153 megawatts is interruptible and the question is, is there a rate option which would allow a customer to increase his interruptible supply, and there is a follow on to that, are there any incentives provided for -- to induce a customer to go on to that -- to increase the interruptible power thereby increasing the 153 megawatt interruptible figure to a higher figure?

MR. MARSHALL: The 153 is the number in the load resource balance that you are referring to, and on page 31 of the load resource review it's made up of 115 megawatts of interruptible and 38 megawatts of curtailable.

Now my understanding that the curtailable customers are under contract and there is no more opportunity -- Mr. Bhutani can correct me on this, I think -- my understanding is that we have all of the contract curtailable that we are going to have at this point in time. The interruptible is made up of two component pieces. It's interruptible energy and it's surplus energy. And the 115 megawatts is the estimate from the load forecast of the amount of capacity for that amount of energy that's used.

Now my understanding is there is no incentive program

for anybody to take more or less of that energy, but there is no opportunity to convert existing contract firm capacity to surplus or interruptible either.

However, new load that comes on the system -- the industrial customers, new load coming on the system could choose whether or not some of that could go under the surplus category or whether it is for firm contract. We have not attempted to delineate how much of it chooses to go one or the other. All new firm industrial load is in the firm category.

Q.179 - Why is there no equivalent arrangement for the existing customers?

MR. MARSHALL: This is from the existing customers, the 153 megawatts.

Q.180 - I'm sorry. Yes, but you said that new customers coming on would have the option of --

MR. MARSHALL: New -- whether it is a new customer or it's a new -- an increase in load of an existing customer. We have had a number of customers in the last few years that have increased load and have not increased their firm contract, they have only increased the energy and taken it as surplus energy. But I believe that surplus is phasing out over a period of time. Mr. Little may be able to refer to that in more detail.

MR. LITTLE: Just from my previous life with the involvement

with the large industrial customers, my feeling is that we are pretty well balanced today, Mr. MacNutt, in terms of the amount of this kind of interruptible energy that large industry can provide to us in terms of what their physical plant characteristics are. It's one of the things that we have been discussing at length in our recent contract discussions, is what is the real flexibility of the facilities, and then how can we better take advantage of them.

We have actually in our recent contracts gone a little bit beyond this too in terms of it's not a standard product but it's -- what we call it is kind of the emergence of a trading mechanism, call it an over-the-counter type market that provides for flexibility that if industry from time to time in response to price signals can actually vary their load further, we are trying to develop a mechanism which probably is a precursor of the transmission level type market that the province is looking for in 2003. We have initiated some development of those concepts.

But in terms of the actual interruptibility of supply -- and what we are talking about is supply that our energy control centre can call up and they are in large enough quantities with a reliable enough interruptibility that those loads are gone within ten minutes. There isn't

a lot more of that out there from our experience.

Q.181 - What price responsive loads is there that might curtail on its own?

MR. LITTLE: There is this kind of load that is the interruptible load, but if we get in very hot market circumstances, let's say we are in August and the New England market prices are very, very high, there are potentially opportunities when industry can vary their maintenance scheduling. They can operate outside their normal parameters if there is sufficient price incentive to do that.

So we have that kind of price dialogue beginning now with the utility and the largest customers.

Q.182 - If you could get a customer to go on interruptible or increase his interruptible, this could reduce your winter peaking, is that correct?

MR. MARSHALL: Yes, that's correct. But as Mr. Little said, discussions with most of the large industrial customers the current amount of load that is interruptible and curtailable today is the amount of industrial process in the province that can respond within the ten minutes.

Q.183 - And the final question. Exhibit NB Power 1, appendix B, at page 33. I guess it's right back to the same page which we were, I'm sorry. I didn't appreciate that. So that's NB Power 1, page 33, which is table 2 in the load

and resources. And I am looking specifically at lines 17 to 19. This is under the heading "Planning Reserve". The load and sources review uses a planning reserve criteria of the greater of 20 percent of firm load or the largest unit. Now how is 20 percent arrived at?

MR. MARSHALL: As stated on line 18, in the brackets at the end of that line, 20 percent of NB firm load plus the firm back-up, you can see the calculation 0.2 multiplied by line 3 plus line 5. That's how it's calculated. So it's 20 percent of line 3 which is the firm New Brunswick load, and it's 20 percent of line 5 which is the firm back-up requirement.

Q.184 - Okay. That is the calculation that is made. What is the source of the 20 percent used in that calculation?

MR. MARSHALL: 20 percent is the reserve criteria that NB Power have utilized for -- well as long as I can remember, going back into the 70s, as a capacity criteria for reserve. We submitted evidence in generic hearings back in 1991 showing that that 20 percent reserve criteria was a reasonable number and that is consistent with most thermal utilities in North America.

It's also our criteria which we utilize with Nova Scotia Power for the Maritime control area and is submitted to Northeast Power Co-ordinating Council as being consistent with meeting the requirements of

Northeast Power Co-ordinating Council and their obligations to NERC.

Q.185 - Okay. Is it fair to assume that in the absence of Point Lepreau the reserve requirement would be significantly less if a lower than 20 percent number was used?

MR. MARSHALL: As shown in that table the -- line 18 is the 20 percent calculation. And you can see the numbers 577 for this coming winter, and Point Lepreau at line 19 is 605. So the governing criteria at this point in time is Point Lepreau at 605. If Lepreau goes away then the governing criteria is 20 percent. If you lower the 20 percent requirement then it would lower the reserve requirement.

Q.186 - Are you aware of any other jurisdiction that for any reason has a reserve of less than 20 percent?

MR. MARSHALL: Yes. Hydro Quebec. I think Manitoba. It depends on the nature of the system. Very, very high thermal -- or hydro based systems, because of the reliability of hydro generation has a higher reliability in terms of operating or less -- lower forced outage rates than thermal units. They can get by with a lower capacity reserve.

But for essentially thermal base systems the standard across North America is about 20 percent.

Q.187 - Would you give us your comments on the pros and cons of having a more or less than 20 percent reserves? You have just indicated why you arrived at what you did. What would the consequences of being greater than 20 percent or less than 20 percent be?

MR. MARSHALL: Having greater than 20 percent would be a higher level of reliability of supply at more cost, and having less than 20 percent would be a lower level of reliability at lower fixed costs in the system. The question then is when units are out what is your purchase cost of replacement. And if you had higher than 20 percent maybe there is more market opportunity to sell the excess and make more money. So you have to consider what is the cost of the outage to society and what is the value of not having the energy to either sell or having energy you have to buy that would affect the cost.

Q.188 - Would NB Power --

MR. MARSHALL: Just one other point I would like to add to that. It's really not our decision. We can recommend the criteria, it has to be within range. We have an obligation as a member of the Northeast Power Co-ordinating Council and we have to do a tri-annual review of supply adequacy every three years, and we do that jointly with Nova Scotia and Maritime Electric for the Maritime area. And we have to demonstrate that our

criteria is reasonable and is adequate in terms of meeting the criteria set down by the Northeast Power Co-ordinating Council. So we are not totally free to increase or decrease our criteria at will.

Q.189 - Would there be -- what circumstances would have to occur for NB Power to consider a reserve of less than 20 percent?

MR. MARSHALL: We would have to -- first of all, we would have to demonstrate jointly with Nova Scotia to the Northeast Power Co-ordinating Council that it was reasonable. We would have to demonstrate that there were economic value in doing so combined with that reliability measure, and show that we meet the reliability requirement and that there is economics in doing it. And I believe we would need to do both of those in order to do it.

MR. MacNUTT: No further questions, Mr. Chairman, of this panel.

CHAIRMAN: Thank you, Mr. MacNutt. Mr. Hashey, how long do you expect your redirect to be?

MR. HASHEY: Very short. I can't give you an estimate without -- it's difficult to give an estimate but it would be, if any, very short I would anticipate.

CHAIRMAN: Okay. I will see if the Board has any questions before we call on you then. I have just a couple of questions. You talked about the energy policy. And I

have been sitting here rereading that paragraph, on a level playing field.

And in a regulator's mind, a level playing field probably under certain circumstances does not just extend to additional generation capacity but it deals with the entire marketplace.

So I believe Mr. Little, and in response you phrased your answer, and Mr. Bhutani picked up on it from that in reference to additional capacity.

What would happen however if the government were to decide that in order to level the playing field they in fact had to impose a unique tax or charge on you as a Crown utility which would do away with your price advantage which again the report in the footnote says is 10 to 20 percent?

What would then happen to your outlook as to the 150 megawatts that would be constructed?

MR. MACPHERSON: Just in general, this whole level playing field issue is designed to try and create the competition, in other words such that NB Power cannot get price advantage over the alternative.

So if anything it would tend to make some of the projects of some of the proponents more competitive. So that is just in general.

And that is really what it is intended to do is to, in

creating competition, make sure that one of the obstacles, potential obstacles to that competition would be if NB Power had an advantage, where they already are the monopoly supplier, if they had an advantage in the future marketplace, then the market may not develop.

So it is really geared to try and create more competition there and to support the idea of more self-generation.

CHAIRMAN: I just read what is public knowledge. And that is 3.1.3.4. And you know, with all due respect I could interpret it to mean that the level playing field means the "competitive market in New Brunswick." And that would be -- now it does just mention new generation. That's what it does.

But then you can look at it and say maybe the playing field has to be level for all participants, whether it be new generation facilities, sales from outside, et cetera. I don't know.

So that is why I put that hypothetical to you. Would that impact NB Power and its load forecast? Because this of course is a question we don't know definitively.

MR. MACPHERSON: There is two issues here. I don't believe it affects the load forecast by virtue of the fact that we have been -- we have done fairly extensive review of our industrial customers to determine just exactly how much

load is potential there for self supply by the customer themselves.

However it could create additional opportunities for generation to be developed in the province on the basis that it would be potentially more fairly competing with NB Power as a source of generation.

I can see that that answer doesn't work yet either.

CHAIRMAN: I'm not going to bother. Looking in a crystal ball and I know that.

On to another matter. In Mr. Thompson's examination of the panel, my interpretation of the result of that cross examination was that there is 100 megawatts of demand that will be displaced by the classic demand side management over the period of 10 years ahead.

And none of that 100 megawatts is attributable to anything that will come into play as a result of the government's energy policy, is that correct?

MR. BHUTANI: That is correct, Mr. Chairman.

CHAIRMAN: Okay. Now I believe Mr. Coon went on to ask you is there no more -- or excuse me, are there no more classic or new demand side management programs which could be factored in to increase that 100 megawatts that you have identified?

MR. MARSHALL: Yes, I said there could be some, but they would be small. Most of the demand side management

programs identified through Marbec and through the IRP in '95 are shell-related insulation type programs.

And a number of those have been accomplished through the R-2000 program and through the government buildings initiative program which is included in this forecast. So that a number of those are included.

Now there would be some opportunity for additional programs maybe in lighting and in some other areas. They would be -- and I said they would be small relative to the penetration in gas fuel substitution which Marbec identified as a big area, which we also identified potentially could be a big area in the IRP in '95, but at that time the economics didn't match up.

Now today the economics still are questionable at the high gas prices. And there needs to be some look at that. But we think that with the energy policy in terms of gas use, and as Mr. MacPherson said, the environmental benefits of gas being consumed directly by the consumer at the end use as opposed to being consumed by the utility, that when you look at the emissions effects of that and efficiency of that, that there should be, you know, some opportunity to achieve that gas penetration.

CHAIRMAN: Okay. I don't want to put myself in the position of that which I criticized Mr. Thompson in his cross examination. But peak-shaving by the use of metering,

from everything that I have read in the literature, is perhaps the most efficient way or effective way of diminishing your peak requirement, is that not fair?

MR. BHUTANI: Peak -- I hate to disagree with the Chairman here.

CHAIRMAN: Oh, you are not -- I said is it fair? You are saying it isn't? That's fine.

MR. BHUTANI: I don't think for our system that statement would be totally accurate. I don't think the opportunities for peak-shaving are there on our system beyond what we already have, Mr. Chairman.

CHAIRMAN: Well, educate me, don't contradict me. Just educate me. But the whole success of time-sensitive pricing is the metering and how much metering there is and the price signal that is given to the consumer, is that not fair?

MR. MARSHALL: Yes. I think that is why, with the industrial load that can vary, we have initiated on-peak and off-peak prices for the industrial surplus and interruptible energy, so that it can move around and the customer can take advantage of whatever our different cost is at those points in time.

Again that is energy -- that is capacity that we are not including in the requirement. That capacity is taken out of our forecast and our requirements for capacity that

we have an obligation to supply.

So the pricing is put there to give the customer an indication of the market value of the energy on-peak and off-peak and to get a share of the value of that.

In the energy policy we are directed to bring forward an on-peak, off-peak time of use pricing. For other sectors it would be for general service and residential.

Now we -- Mr. Buchanan said Nova Scotia's experience, 7 megawatts. There may be more. We have not yet done a detailed study to say what effect that would or would not have.

But in the past our review of on-peak and off-peak pricing in our system is not significant. The issue is that we have a peaking hydro system in the wintertime. And we have an energy-limited hydro system. We utilize all that energy in the daytime hours to shave the peak.

So in order to gain significant value we have to move energy 16 hours out of the day into the middle of the night. And so it is -- we have to move energy farther in our system than they would in New England for instance or they would in other completely thermal jurisdictions.

So some of the literature that you read, and you say peak-shaving gains significant value in those systems, we don't get as much in this system because of the nature of our hydro.

CHAIRMAN: All right. I think I understand what you have been telling me. Is Nova Scotia's mix the same as ours? No two utilities are the same mix, and I know that.

But are the same considerations that you have just expressed, are they -- were they present in Nova Scotia? Or is it more conducive there to the use of metering and shifting your load than it is on yours?

MR. MARSHALL: With their predominantly thermal system they have less hydro than we do in New Brunswick. So their hydro would be utilized in a much sharper needle peak.

So I think there may be more opportunity in Nova Scotia for shifting than in New Brunswick.

CHAIRMAN: All right. Just one last one. And I was listening to Mr. MacNutt's multistaged question or scenario.

And I just -- it suddenly crossed my mind that, you know, that is talking about what if all the worst scenario case were to happen and whatnot. And the Milbank units were what, 200 megawatts?

MR. MACPHERSON: That's correct. There were four roughly 100 megawatt units there. They were put in place to supply a peaking service to Hydro Quebec.

CHAIRMAN: Yes. And I was there when your witnesses in the early 90s also said -- or when NB Power said needed --

MR. MACPHERSON: That's correct.

CHAIRMAN: And how many remain?

MR. MACPHERSON: There are presently -- all four of them are still there. Two of them are owned by NB Power.

CHAIRMAN: So the other two have been sold?

MR. MACPHERSON: The other two were sold to Enron Canada, but they have not removed them yet.

CHAIRMAN: That is the plan, is to remove those two?

MR. MACPHERSON: That's correct.

CHAIRMAN: Okay. Thank you. Mr. Hashey, go ahead.

MR. HASHEY: Mr. Chairman, possibly we could adjourn now. I think it's that time. If there are any clarifications, I would like the panel to have an opportunity to consider really what has been said. It would be, from what I have heard, I doubt if there is very much to be clarified and I think we would be pretty much prepared to go on with the second panel in the morning.

But if necessary, we could recall briefly this panel if there is anything that someone feels that should be clarified. At this moment I don't have much.

CHAIRMAN: Anything to save time. What time would suit the parties in the morning? Would 9:30 be an appropriate start? Good, we will adjourn until 9:30 tomorrow morning.

(Adjourned at 5:25 p.m.)

Certified to be a true transcript of the proceedings of this hearing as recorded by me, to the best of my ability.

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