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New Brunswick Board of Commissioners of Public Utilities

In the Matter of an application by NB Power dated January 8, 2002 in connection with a proposal for Refurbishment of its facility at Point Lepreau.

Delta Hotel, Saint John, N.B.
June 18th 2002, 9:30 a.m.

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CHAIRMAN: David C. Nicholson, Q.C.

COMMISSIONERS: Ken F. Sollows
Jacques Dumont
H. Brian Tingley

BOARD COUNSEL: Peter MacNutt, Q.C.

BOARD SECRETARY: Lorraine Légère

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CHAIRMAN: Good morning, ladies and gentlemen. Any preliminary matters? Mr. Hashey?

MR. HASHEY: Mr. Chairman, our undertakings should be completed by the break. It is just a matter of timing of getting these photocopied this morning, which we couldn't quite meet this time.

CHAIRMAN: All right.

MR. HASHEY: But they will be ready.

CHAIRMAN: Thank you.

MR. HASHEY: Otherwise nothing further.

MR. MILLER: Mr. Chairman, yesterday there was a comment made as we were reading our final undertakings into the record by Mr. MacNutt that there may have been another undertaking.

I checked the transcript on that. I wasn't able to find anything. I haven't had the opportunity to speak to Mr. MacNutt this morning. But I just wondered whether he had the opportunity as well.

MR. MACNUTT: I'm sorry?

MR. MILLER: I just was saying that when we were completing our undertakings yesterday, there was some question whether there was one additional undertaking arising out of the Board's questions.

We checked the transcript. And we weren't able to identify that. And I wondered whether anything had been identified.

MR. MACNUTT: There is two ways we could proceed, Mr. Chairman. I could ask for the undertaking now. And I could read the question I asked at the time. Or we could simply waive it if you rule that I had my opportunity and lost it.

CHAIRMAN: Have you checked the transcript, Mr. MacNutt?

MR. MACNUTT: No. I haven't had the chance to do that.

CHAIRMAN: Why don't you gentlemen get together at the next

break then and look at that. Mr. Hyslop, you had your hand up?

MR. MACNUTT: I'm not denying that I may have missed asking it per se. But I thought it was understood that they would respond if I did not expressly extract an undertaking.

MR. MILLER: And Mr. Chairman, just to be clear, we have absolutely no hesitation in providing the answer. And I will work that out with Mr. MacNutt. And we will provide the response to the question that he seeks.

CHAIRMAN: Okay. Thank you, Mr. Miller.

MR. MILLER: Thank you.

CHAIRMAN: Mr. Hyslop? 16.

MR. HYSLOP: Thank you, Mr. Chairman. Yesterday afternoon the International Brotherhood of Electrical Workers submitted a paper written by Professor Gordon, which I think at the end we agreed or it was ruled that the paper would be submitted as an attachment to the written brief of the International Brotherhood of Electrical Workers.

I had a chance to further review the paper. And after doing so I noted, starting on page 19 of the Gordon document, there is a second document entitled "The Multibillion Dollar Giveaway of our Electric Power Industry."

And in reviewing that document, the document clearly deals with a number of matters relating to power generation and power reorganization in the Province of Ontario. And our submission would be that that part of the document should be struck from the document that is being attached.

I had occasion yesterday, after the hearings arose, to make my point of view known to people from the International Brotherhood of Electrical Workers, including Mr. Galbraith.

Mr. Galbraith indicated that he may or may not be here this morning. I said I would raise the point. And he indicated to me that he substantially agreed with the point I was making, that being that the situation in Ontario isn't very relevant or meaningful to this hearing.

So I would ask for Board's consideration of removing pages 19 to the end of the Myron Gordon document from the record.

CHAIRMAN: Any other party have a comment on that?

MR. HASHEY: I would like to speak to that, Mr. Chairman, just very, very briefly. I have no problem with Mr. Hyslop's suggestion whatsoever.

But I would suggest if that is happening, there are sections of Mr. Adams' report that is in evidence that

should be struck for similar reasons, as being completely irrelevant to this hearing, particularly on things called lessons on potential pitfalls and his comments in relation to privatization, which of course is not an issue here.

But I concur with Mr. Hyslop in his suggestion. I can see that that really isn't an issue before this tribunal.

CHAIRMAN: If we struck everything that wasn't relevant we would probably cut the record in half, Mr. Hashey. Any other comments in reference to this matter?

MR. MILLER: Mr. Chairman, I support Mr. Hashey's position. I have reviewed the paper and it seems to deal exclusively with the Ontario situation and as such has very little relevance.

CHAIRMAN: Well, I haven't read it and none of the Board has. Well, certainly we will cut the record by that amount then, Mr. Hyslop, is what we will do.

Okay. Any other preliminary matters? Mr. Adams, I understand from -- oh, Mr. Thompson has his hand up.

MR. THOMPSON: Pardon me, Mr. Chairman. I would -- I guess I spoke in favor of that not being entered as evidence yesterday.

And just to clarify the situation regarding that document, could you clarify the position that the panel is accepting that on? Is it accepted as comment from an

informal intervenor? Is that --

CHAIRMAN: What we said was that they could file it with the Board along with their presentation to us. It would not be marked as an exhibit. Therefore it doesn't necessarily -- the Board does not necessarily accept what is stated in it.

MR. THOMPSON: So it is not evidence?

CHAIRMAN: It is not in evidence, no.

MR. THOMPSON: Thank you. That is fine.

CHAIRMAN: Mr. Adams? And I understand from Board counsel that you wanted to address the Board before you took the stand.

MR. ADAMS: Mr. Chairman, I would like to make some submissions on process and to seek your guidance as to how to complete the record here with regard to the material that I have prefiled with the Board.

What I'm suggesting is that -- Energy Probe is not able to obtain counsel to assist us today. So we are going to need to depart somewhat from your traditional practice.

What I'm proposing is that I would take the stand to be sworn. Then I would introduce my credentials with reference to the evidence, appendix A and also to an interrogatory response that I was asked, where I was asked

some questions on my credentials.

The parties would have an opportunity to make submissions on how they see the evidence being presented to you or what weight to attach to the opinion element of the evidence. The Board would have an opportunity to make whatever rulings it wants to make with regard to those submissions.

Then I would propose that the evidence as prefiled be accepted pending the Board's ruling. Then I would make a brief presentation with regard to summation of the evidence with a number of corrections and clarifications and then be subject to cross-examination. I would not propose to make any comments by way of redirect.

The only difficulty I can anticipate with this proposal is that should undertakings arise that it may be difficult for me to respond to undertakings in a way that is timely with regard to the parties' anticipated statements on summation.

It is a loose end that I really don't know how to deal with. But for the remainder of it I think my proposal certainly meets Energy Probe's needs as an intervenor pending your decision.

CHAIRMAN: Mr. Adams, it certainly seems to be a logical way to proceed for me, from what I have heard you say. The

one thing I would suggest is you don't need to go into your c.v. or your qualifications.

That is up to -- you have filed it, prefiled it. So it is up to any of the intervenors and the applicant to question your qualifications, rather than you having to recite your c.v.

So that certainly appears to be a legitimate way to proceed. So if you would like to take the stand, why the Secretary will swear you.

Thomas Adams, sworn:

CHAIRMAN: For the sake of the record though give us your full name, please, and your position with Energy Probe.

MR. ADAMS: My name is Thomas McDowell Adams.

CHAIRMAN: And you position with Energy Probe?

MR. ADAMS: I am Executive Director.

CHAIRMAN: And you are asking this Board to qualify you as an expert, therefore able to give opinion evidence, is my understanding, Mr. Adams?

MR. ADAMS: That is correct. In the matters that are presented in the evidence that is currently on the record as exhibit 6 and also the I believe eight interrogatory replies that Energy Probe filed in response to questions from NB Power.

CHAIRMAN: Are you able to define your field of expertise?

MR. ADAMS: My field of expertise relates to the environmental and economic performance of power systems. I previously have been described as a utility analyst. It is a term without precise definition.

My experience includes a period as a member of the regulatory body of the Ontario independent electricity market operator and other official and semi-official functions.

CHAIRMAN: All right. Do any of the parties wish to question Mr. Adams in reference to his qualifications for the Board to qualify him as an expert able to give opinion evidence in reference to, I guess, as an analyst of utilities?

All right. Then the Board will -- sorry, go ahead, Mr. Hashey.

MR. HASHEY: Yes. I certainly have a problem understanding really what that expertise is, probably something that I could stand up and ask to be qualified on as well, having had experience in a few of these hearings and I have worked with NB Power.

I just don't follow that expertise. I have no problem with Mr. Adams giving evidence and having the Board attach whatever weight they may wish to attach to that evidence. But I don't agree that he has expertise in the issues in

involving Point Lepreau and relevant issues to this hearing. I have a real -- I have a real problem with that.

I mean, I could cross-examine a little bit on some of the things I know Mr. Adams has indicated that he has been qualified. He works for an organization called Energy Probe, which organization stands for the fight against nuclear power. That is what they stand for.

Now he is not an independent expert. He has got a real bias here. And I have a problem with the qualification of somebody that has a declared bias.

Now fine, Mr. Adams can give his evidence. He can be heard. And you can attach whatever weight that you would like to that evidence. And I can see that. But beyond that I have a problem, Mr. Chairman.

CHAIRMAN: Thank you, Mr. Hashey. Any other comments?

MR. MILLER: I just want to say that we share the views of NB Power on the manner of dealing with this. And Mr. Adams in response to your question said he is a utility analyst which he admits is a term without a definition. And it makes it very difficult for us to assess whether one should be considered to be an expert when they are calling themselves something that has no definition.

It is just puzzling. If he is qualified as an expert

utility analyst, no one knows what that means, so that poses a challenge for all of us. So I again would echo the views of Mr. Hashey and say that we are certainly prepared to have his pre-filed evidence put on the record and subject him to cross-examination on what he said. But beyond that we don't think he should be qualified as an expert to give opinion evidence.

CHAIRMAN: Thank you, Mr. Miller. Any other comments? Mr. Coon?

MR. COON: Yes. Good morning, Mr. Chairman. Just a couple of brief comments with respect to interest, clearly all the intervenors participating in these proceedings have particular interests. We had a witness from AECL before the Board obviously with a particular interest, so I don't think that is an issue to be concerned about with respect to the evidence being provided.

It is always difficult when one is an analyst and recognized so widely in society by the media, by governments to sort of certify that. There is no certification process for analysts. It is based on experience and the soundness of commentary. And our view is certainly Mr. Adams has over the years generated quite a lot of credibility in the eyes of many within various part of civil society and within government in terms of

his commentary. So we don't see why his -- any opinion evidence he might offer might not be considered expert in the context of him being an analyst concerning these matters.

CHAIRMAN: Thank you, Mr. Coon. Any other comment? We will take a brief recess and be back in three minutes.

(Brief recess)

CHAIRMAN: The Board has taken a couple of minutes to consider the nature of Mr. Adams' standing in front of the Board. And we agree with the proposition put by the applicant and by AECL that we will hear Mr. Adams' opinion evidence and we will give it the weight that it deserves.

MR. ADAMS: Thank you, Mr. Chairman. I will start by describing the origin of the paper that appears before you. It's -- the principal findings of the paper that's before you are extracted from a wider research project that our foundation undertook with the assistance of the Industry Canada looking at the interests of residential and small commercial customers in Canada. So we conducted a survey of the 10 provinces analyzing the conditions in the power market in each of those respective markets. And so most of the findings from this paper are derived from that report.

The report is about to be published the -- and it has

gone through the peer review process. The peer reviewer was Marie Rounding, currently the president of the Canadian Gas Association, former chair of the Ontario Energy Board.

The principal findings of the paper are four-fold. The first is to argue that NB Power is the -- measured in financial terms, the weakest utility in Canada that -- in the event that NB Power continues with its current proposed construction program, that the -- it's our expectation that the utility will require some significant injection of capital from some level of government in order to meet its financial requirements. A fourth -- or a third general comment is that the investment strategy that the utility is currently pursuing is a risky one.

And finally I make some brief remarks with regard to low carbon energy alternatives to the nuclear investment.

Relative to all the other utilities in Canada, NB Power has put itself in what I have described as a double jeopardy situation of having relatively high debt level -- debt and other liabilities and also high operating costs.

The debt of NB Power in the last number of years has declined somewhat but the rate of decline is much less than would normally be anticipated with a utility that didn't have any significant capital projects underway.

So --

MR. HASHEY: Excuse me. Mr. Chairman, we are now into argument. I just don't really know what's going on here. We have talked about a report that isn't filed. I didn't speak to that. I don't really need to see it. But it seems to me that what we are doing is arguing in support of Mr. Adams' evidence. Surely, he has given his evidence and he should stand on cross-examination. I don't know really what we are doing here. It's quite different.

CHAIRMAN: Well, Mr. Hashey, I tend to agree with most of what you are saying. However, all witnesses who prefile their evidence have the opportunity to give an overview of that, and I think the one thing you could do, Mr.Adams, is just stick to an overview because it is there and we have read it, rather than getting into the meat of the delivery again. Okay.

MR. ADAMS: In making my remarks about NB Power's relative debt level, NB Power replied -- perhaps I should seek your guidance again here, Mr. Chairman.

CHAIRMAN: That is argument. I think Mr. Hashey is correct on that. That would be argument, yes.

MR. ADAMS: The difficulty I'm having is that NB Power has put a reply argument into the transcript in advance of the evidence appearing before you being -- you know, being

cross-examined. So I am somewhat -- I want to make some remarks about their comments on my evidence but I'm somewhat out of order.

Now if you are comfortable with me replying to their reply that I might make these comments by way of this form of direct evidence.

CHAIRMAN: Well I think that you have an -- first of all, NB Power was directed by the Board to give rebuttal testimony if they could anticipate what it was that you were going to say so that we wouldn't have to keep going around and around and around. If in fact what they have said in rebuttal is new to their evidence at this time, you can comment on exactly what it was that they said. But don't forget that you have the opportunity to argue at the conclusion of the hearing. So rather than just argue about it -- I mean, they may have an opinion that is contrary to yours. They have put theirs on the record and yours is on the record. Okay. But if it is new facts or whatever, why then you are entitled to comment on it now.

MR. HASHEY: Mr. Chairman, I will interrupt only one last time. Mr. Adams had an opportunity as a party to this hearing to sit at this table and cross-examine NB Power witnesses, which he did not do. And my fear is that what -- if he starts into this without giving them any

indication or giving him any cross-examination, that we may have to recall witnesses if we get into something new in answer. That's my only fear. And let it go and see.

CHAIRMAN: Yes. I'm saying that he can rebut -- or he can comment on your rebuttal evidence, Mr. Hashey, but therefore the subject matter presumably has been introduced in the hearing before, so it's not new. Okay.

MR. HASHEY: Thank you.

CHAIRMAN: See what you can do with that, Mr. Adams.

MR. ADAMS: I make the comment that NB Power's debt level relative to the electricity debts that prevail in Ontario relative to the size of the provincial economy and relative -- that is -- I'm sorry, that NB Power's relative debt level is about twice -- almost twice that of Ontario's. And that Ontario's debt level was considered very severe and one of the factors that contributed to the restructuring of Ontario's power system that has -- is currently underway.

NB Power in its remarks in rebuttal evidence, comments that the electricity intensity of New Brunswick economy is very high and that this is somewhat of an explanation for the relatively high debt level with New Brunswick Power.

My -- the comment that I wanted to make in my presentation to you is that it is correct for NB Power to

describe New Brunswick's energy -- or electricity intensity of its economy to be relatively high compared to the national average in Canada. The reason that I was drawing attention to the high debt level with NB Power is not to describe its intensity but to make a comment on the capacity of the provincial economy to bear the weight of its electricity liabilities which is one of the concerns that animates this report.

There are a couple of corrections that I need to make to the evidence. On page 6 I make some comments about the cost of -- I'm sorry, page 7. I make some comments on the cost of the Lepreau retubing relative to the cost of other nuclear rehabilitation programs. That's in the second last -- third last paragraph from the end.

And the evidence that I have put in front of you suggested that the Lepreau retubing cost could be compared with the Pickering and the Bruce units 3 and 4 rehabilitation costs. And I put figures in front of you as the Lepreau retubing costs in excess of $1,300 per kilowatt. The Pickering A refit costs --

CHAIRMAN: Where are referring to? I can't find this?

MR. ADAMS: Page 7. I am sorry.

CHAIRMAN: You want to make a correction on that.

MR. ADAMS: A correction.

CHAIRMAN: All right. What line are we referring to there?

MR. ADAMS: Go to paragraph that starts, "The investment required to return Point Lepreau to service".

CHAIRMAN: Yes. But what do you want to correct in that, Mr. Adams, is what I'm saying.

MR. ADAMS: Okay. In that paragraph I say that the cost of the Pickering A rehabilitation is forecasted to cost $728 per kilowatt. That was correct as of the writing of this paper. But since that time the Ontario Power Generation has updated its estimated cost of completion.

And the current cost is a range cost that extends at the top of the range to $1,067 by current estimate. Approximately $1,100 per kilowatt, closer to the cost of the Lepreau retubing.

MR. MILLER: Mr. Chairman, if I may, I want to point out for the record that this is new information, and the parties have had no opportunity to examine it and inquire into it.

CHAIRMAN: Yes. I appreciate where Mr. Adams is coming from, what he is attempting to do. Unfortunately, in a hearing of this nature, Mr. Adams, it's simply one snapshot in time. And we could keep on amending and amending and amending. However, I can understand that you might be cross examined by somebody who would want to say isn't it really 1,100. So I understand where you are

coming from.

MR. ADAMS: Another correction that I would like to make, and it is to the final footnote. I'm sorry, not the final footnote, but the footnote number 8.

There I'm attempting to -- I'm attempting to estimate the rate impacts of some of the accounting issues that are identified in the report.

And I want to explain that there is an error in this -- in this footnote. The error is -- was picked up by NB Power in its interrogatory number 8. And there is a discussion in Energy Probe's reply to -- there is a discussion in the interrogatory response at question number 8 that provides further detail correcting the error in this -- in the statement contained in footnote number 8.

And the final remark that I will provide you with is that, and it actually relates to that same page. In its reply argument, NB Power complained about some of the financial logic that is discussed in the final paragraph, where I was talking about waste disposal in decommissioning provisions.

I would say that I have not studied in detail the interest cost treatment that NB Power applies to its provisions. So the point that I am making here is a

relatively minor one. The only -- the significant point here is that the accounting approach that NB Power has used for its waste disposal and decommissioning reserves were identical to the ones that were used in Ontario. Those accounting approaches were found wanting. And Ontario is in the process of restructuring the entire regime around waste disposal and decommissioning because of concerns like those that are discussed in this paragraph.

But perhaps if anybody has further questions, we can pursue it further in cross-examination. I wouldn't propose to go any further in evidence in chief than that.

CHAIRMAN: Mr. Hashey, do you have any cross-examination?

MR. HASHEY: My understanding was that I would be the last to cross-examine, Mr. Chairman.

CHAIRMAN: Right. Yes. Yes, that's correct, sorry. So it would be AECL, number 8.

MR. MILLER: Yes, Mr. Chairman, I have some questions for Mr. Adams.

CROSS-EXAMINATION BY MR. MILLER:

Q. - And, Mr. Adams, if you could open your paper, which you filed with the Board as prefiled evidence, to page 5. It's page 5 of my version of it. I don't know if it's page 5 of yours. The beginning of the paragraph at the

top says, "Notwithstanding its weak financial condition". If you could get to that page.

MR. ADAMS: Yes.

Q. - All of my questions will relate to that, so if you could keep that open and available.

Before I get into that, some preliminary questions. In appearing as a witness here today, have you received financial support from any other intervenor participating in these proceedings?

MR. ADAMS: Yes, I have. Energy Probe is a small consumer environmental advocacy group. We get no funding from government, business or unions. So it's very challenging for an organization of our means to appear here. Understanding that difficulty, the Conservation Coalition agreed to pay a portion of the second return air flight to appear today.

Q. - And what is the Conservation Coalition?

MR. ADAMS: Conservation Council, excuse me.

Q. - Oh, the Conservation Council of New Brunswick?

MR. ADAMS: Yes, sir.

Q. - Thank you. And in appearing here today would you consider yourself to be primarily a critic of nuclear power?

MR. ADAMS: Energy Probe's purposes are to promote a

cleaner, cheaper power system for Canada. And in that capacity we have been critics of nuclear power.

Q. - Thank you. And you, yourself personally are -- you consider yourself personally a critic of nuclear power?

MR. ADAMS: I wouldn't offer that statement as an unqualified statement. There are elements of nuclear technology that Energy Probe has endorsed. But nuclear power generation --

Q. - Yes, that's my question.

MR. ADAMS: -- specifically not.

Q. - Okay. So you are a critic of nuclear power?

MR. ADAMS: I'm a critic of nuclear power generation.

Q. - Yes. And you have called yourself that in writing in the past?

MR. ADAMS: That's correct.

Q. - Okay. And you are aware of the mandate of New Brunswick Power under the Electric Power Act?

MR. ADAMS: Yes.

Q. - And what do you understand that to be?

MR. ADAMS: Like many crown utilities in Canada, NB Power's responsibilities are to provide adequate power supply at minimum cost.

Q. - Thank you. Have you read all of New Brunswick Power's prefiled evidence, and all of the responses to

interrogatories that have been filed with this Board?

MR. ADAMS: I have read all of NB Power's prefiled evidence. I may have missed a few of the interrogatory replies.

Q. - Okay. Have you read the transcripts of the proceedings to date?

MR. ADAMS: I have attempted to keep up with them. I have not reviewed all the transcripts.

Q. - So you know some of it, but not all of it?

MR. ADAMS: That's fair.

Q. - You would be aware though that NB Power has concluded that the proposed refurbishment of Point Lepreau is the least cost alternative to meet forecast financial -- or forecast power requirements?

MR. ADAMS: That is the company's opinion.

Q. - Okay. And you are aware that insufficient power availability would be a serious detriment to New Brunswickers? That's a fair comment?

MR. ADAMS: A fair comment.

Q. - So it's not in the public interest to have insufficient power availability?

MR. ADAMS: No. It is in the public interest to have a reliable power system.

Q. - Yes. Did you read the decision of the PUB dated July 11, 2001 which has been called the generic hearing decision?

MR. ADAMS: It has been some time but, yes, I have.

Q. - Okay. I just wanted to get some background on what your understanding of these proceedings are.

Now I would like to ask you a few questions about the corporate status of Energy Probe. And in particular, the quality assurance processes and quality control processes that Energy Probe have.

Just could you tell me what type of corporate entity, what legal status does Energy Probe have?

MR. ADAMS: Yes. Energy Probe is a federally registered charitable corporation. We are incorporated under the Corporations Act. We are not a OBCA. It's a national organization.

Energy Probe itself in my capacity as executive director is just a sub-component non-corporate entity under the auspices of the Energy Probe Research Foundation, which is the legally determined charitable body.

Q. - Okay. Thank you. You mentioned you were a corporation. And you consider yourself to be a national organization. Is there a Board of Directors?

MR. ADAMS: Yes.

Q. - Okay. And how many New Brunswickers are on the Board of Directors?

MR. ADAMS: There are no residents of New Brunswick that are members of the Board of Directors.

Q. - Okay. And do you have members or shareholders?

MR. ADAMS: It's a non share capital corporation and we have no shareholders. We have members and --

Q. - And how many New Brunswickers are members of Energy Probe?

MR. ADAMS: The members of the corporation are very few in number.

Q. - Yes. And how many of them are New Brunswickers?

MR. ADAMS: None.

Q. - Okay. Who speaks for Energy Probe?

MR. ADAMS: Energy Probe is represented by its officers, myself and my colleague, Norm Reubin, who is our director of nuclear research.

Q. - Okay. You and Mr. Reubin. And before you make public statements, what quality control and quality assurance procedures does Energy Probe have? For example, do you have fact checkers that work for you?

MR. ADAMS: Energy Probe has let's say only a single part-time employee which is myself.

Q. - Mmmm.

MR. ADAMS: And Mr. Reubin who is a part-time employee, partly retired. So he is --

Q. - Okay. So any mistakes would be because of lack of staff?

MR. ADAMS: What I am explaining is that the entire staff complement is as described. The quality assurance process for the overall foundation relies on a peer review process internal to the foundation.

Q. - Okay. And you believe accuracy is important?

MR. ADAMS: Yes.

Q. - Yes. And it wouldn't be your intent to mislead anyone?

MR. ADAMS: No.

Q. - Now I want to review with you the approval process for the specific paper that you filed with the Board. Your paper is entitled, "NB Power's Proposed Point Lepreau Retubing Review of Financial Fitness Institutional and Investment Risk". Who wrote that paper?

MR. ADAMS: As I explained in my evidence in chief, the paper is substantially extracted from a larger document that had two main authors, myself and a consultant retained for a component of the paper.

Q. - Okay. What I want to know is who is accountable for the statements made in the paper filed with the Board?

MR. ADAMS: There is only one author, myself.

Q. - Now you presented it as evidence of Energy Probe and not evidence of Tom Adams. Other than you, who at Energy Probe reviewed it?

MR. ADAMS: The statements in this paper have been reviewed by some of my colleagues in the office.

Q. - And who are they?

MR. ADAMS: A volunteer by the name of David McIntosh.

Q. - Yes.

MR. ADAMS: Some of the statements were reviewed by another one of my colleagues, Lawrence Solomon who is affiliated with the Foundation.

And the statements were also reviewed by the peer reviewer for the national survey which is Marie Rounding.

Q. - Okay. Now I just want to be clear on this. Did that peer reviewer review page 5, the one I have asked you to have open?

MR. ADAMS: Most of the statements on page -- on the page that you have asked me to open were reviewed by all of those people.

Q. - Okay. And did any of those people have any comments?

MR. ADAMS: None that I can specifically remember.

Q. - They didn't tell you to change anything?

MR. ADAMS: None that I can specifically remember. The paper was subject to a very long development process.

Q. - Yes.

MR. ADAMS: So it was an iterative process. I can't recover by memory the entire process.

Q. - I can understand that. Let me put it this way. Was there any disagreement about saying what you said on page 5?

MR. ADAMS: Not that I can recollect.

Q. - Now is there a resolution of Energy Probe approving this paper --

MR. ADAMS: No.

Q. - -- a resolution of the directors?

MR. ADAMS: No.

Q. - No? Okay. And how many drafts of your paper were prepared before it was finalized?

MR. ADAMS: The documents that contributed to this paper were under development for more than a year prior to its filing with the tribunal here.

Q. - And based on what you have heard and what you have read in the transcripts, are there any statements in your paper that you now know to be false or misleading?

MR. ADAMS: I have commented on those in my evidence.

Q. - Okay. So that was comprehensive. There is nothing else that you would like to retract at this point?

MR. ADAMS: No.

Q. - Okay. And you were here last Thursday. And you questioned Dr. Kugler about alleged debt owing from AECL to Ontario Hydro. And you heard his answer. You don't

want to change your statement as a result of what you heard?

MR. ADAMS: I don't want to change the statements on this page, nor do I want to change the statements in my reply to Energy Probe's response to NB Power's interrogatory number 1.

Q. - Okay. Now you have come to Atlantic Canada before to make presentations, is that correct?

MR. ADAMS: I have testified before the Crown Corporations Committee of the Legislative Assembly of New Brunswick.

Q. - And you have made presentations at just public sessions, conferences, that sort of thing?

MR. ADAMS: Yes. I was a guest of the Atlantic Institute for Market Studies at a conference that they conducted in October of 2000, discussing energy options for Atlantic Canada.

Q. - Yes. And would it be a fair description that the usual -- your usual presentation is that you come to Atlantic Canada and present us with lessons from Ontario's experience?

MR. ADAMS: That is one of the themes in my recent presentations. But I would say that when I started seriously studying NB Power and publishing papers on NB Power and making presentations, for example, to the

Legislative Assembly, it was before Ontario's electricity restructuring had commenced.

So at the time, those comments were not based on the Ontario experience, because there was little Ontario experience to go on.

Q. - Okay. Let me put it this way. You consider yourself to be more of an expert on the Ontario experience than on the experience in Atlantic Canada and New Brunswick?

MR. ADAMS: I have greater professional experience with Ontario in part because I was a member of the market design committee and a member of the regulatory body of the IMO.

Q. - Okay. And in providing those lessons to New Brunswickers that you would like to provide to us, you would agree that if any of the facts underlined in your lessons are wrong, then your lessons aren't very useful? Would you agree with that as a general comment?

MR. ADAMS: The factual accuracy of statements is essential to the quality of the advice.

Q. - Right. Now I want to go to the fourth paragraph on page 5 of your paper?

MR. ADAMS: With regard to experience with other CANDU reactors?

Q. - Yes. That is the one.

MR. ADAMS: Yes.

Q. - The second sentence you say "From 1983 to 1989 Ontario Hydro attempted a refit of similar scope on four Pickering reactors." Okay. That is at the beginning of the paragraph.

And at the end of the paragraph you say "AECL and Ontario Hydro had a risk-sharing partnership in Pickering-1 and 2."

MR. ADAMS: Yes.

Q. - Now when I took English back in grade school I was taught to always use the paragraph for the same thought.

So when you are saying that AECL and Ontario Hydro had a risk-sharing partnership, I assume you are referring to the refit of the four Pickering reactors, is that correct?

MR. ADAMS: The risk-sharing partnership extended to and included the refit.

Q. - Okay. Let me ask you this. In the retubing of Pickering A between 1983 and 1989, there was no retubing agreement comparable to exhibit A-13, was there?

MR. ADAMS: No. The risk-sharing partnership that I'm referring to here was referred to in the vernacular. And the precise legal documents haven't come out.

So I don't know what his precise legal definition is. But it was referred to in common parlance as the

payback agreement. And that relates to an agreement that was adopted at the construction of Pickering units 1 and 2 in the 1960s.

Q. - Okay. So to come back to my question, in the retubing of Pickering A there was no retubing agreement, refurbishment agreement or plant performance agreement in any way comparable to what is before this Board today?

MR. ADAMS: My only hesitation with your question is the statement "in any way comparable."

Q. - Well, we will come back to the so-called Pickering payback agreement. So qualify your answer to that.

But what I want to know is when Ontario Hydro retubed their reactors, I want you to confirm there was no agreements for that retubing project similar to what this Board is dealing with?

MR. ADAMS: Maybe I can be helpful here. There was no specific homolog to the agreements that NB Power has signed with AECL related to its proposed retubing.

Q. - Right. And the other day when Mr. Thompson of the Conservation Council was questioning Dr. Kugler, he may have been a little bit misled by your paper. Because he seemed to think there was a performance agreement. And admittedly that can be implied from what you have said here?

MR. ADAMS: There was a performance agreement that relates back to the original construction of those reactors. And that performance agreement extended out until 1993 when Ontario Hydro wrote off its debt with AECL.

Q. - Now in the media on March 4th 2002 in The Telegraph-Journal you were quoted as saying that the arrangement NB Power is considering from AECL was virtually identical.

Do you want to distance yourself from that comment now?

MR. ADAMS: No.

Q. - You think it is virtually identical? You have read the retubing agreement, the refurbishment agreement, the plant performance agreement?

MR. ADAMS: The important similarity between these two commercial arrangements, the arrangements between formerly Ontario Hydro and AECL on one hand and NB Power and AECL on the other hand is that AECL was in a position where the good performance of the unit would reflect back in payments to AECL and poor performance of the unit reflected back in payments from AECL to its commercial partner, either NB Power in one case or Ontario Hydro in the other case. That is the similarity that I'm drawing attention to.

Q. - And I think you are wrong on that. But we will have the

chance to come back and talk about the Pickering agreement. But I think you are wrong about it. But as I say, you will have your chance on that.

What I want you to confirm now is that the retubing -- I mean, this Board is considering a proposal to refurbish Point Lepreau. And you have said the agreements are virtually identical.

And I want you to tell me now, are the retubing, refurbishment, and plant performance agreements virtually identical?

MR. ADAMS: They are identical in the respect that I have just spoken to.

Q. - Okay.

MR. ADAMS: And that is that there is this reciprocal nature or this balanced agreement where good performance benefits AECL, poor performance flows the other direction.

Q. - In this same article I referred to, the March 4, 2002 article you are quoted as saying AECL's commitment has proven to be a promise AECL is not prepared to live up to. That is what you were quoted as saying.

Now on the record under oath are you saying that that was your statement?

MR. ADAMS: That was my statement to the newspaper.

Q. - To the newspaper?

MR. ADAMS: And that is a fair reflection of my understanding of the circumstances of the relationship between Ontario Hydro and AECL.

Q. - That was your understanding?

MR. ADAMS: As reflected in the evidence that is presented here.

Q. - Okay. Now you have been talking about the so-called Pickering payback agreement. Is there an agreement that is called the Pickering payback agreement?

MR. ADAMS: This is where I'm a little bit uncertain. Because the contractual arrangements to my knowledge were never revealed publicly.

Q. - Okay. So you have never read the agreement?

MR. ADAMS: The Pickering payback agreement? No, I have not.

Q. - Okay. Thank you.

MR. ADAMS: I am only --

Q. - Do you know who the parties to the agreement were?

MR. ADAMS: There were three parties to the agreement, Ontario Hydro, AECL, and the Ontario provincial government.

Q. - Now Dr. Kugler, in his testimony, talked about that agreement. He said that it was dated around 1963, I believe, and it was an agreement whereby the Government of

Canada, through AECL, and the government of the Province of Ontario, contributed to the capital costs of constructing Pickering 1 and 2. Is that your understanding?

MR. ADAMS: That is correct.

Q. - Okay. So they contributed to the capital costs, so they were owed money by Ontario Hydro?

MR. ADAMS: They were partial owners of units 1 and 2.

Q. - You have never read the agreement, correct?

MR. ADAMS: They are reputed to be partial owners.

Q. - Now I want to go back to page 5 of your paper. Okay. And you say, a large element -- this is in the same paragraph we were referring to, the fourth full paragraph, you say a large element of Ontario Hydro's Pickering refit write-offs was debt owing from Atomic Energy of Canada Limited.

MR. ADAMS: Yes.

Q. - You say that. Now what is your definition of debt? It would be a sum of money owed, wouldn't it?

MR. ADAMS: Sum of money owed.

Q. - Just as simple as that. It is not complicated?

MR. ADAMS: No.

Q. - Sum of money owed.

MR. ADAMS: The conventional understanding.

Q. - Even a utility analyst knows that. Now if I were to write down on my ledger here, Mr. Adams, that you, Tom Adams owe me, Bernie Miller, $100, would you owe me a debt?

MR. ADAMS: To be a proper debt, there would have to be some mutual agreement.

Q. - Right. And if I wrote that you owed me $410 million, would you owe me a debt?

MR. ADAMS: My same answer.

Q. - Now when you said that a large element of Ontario Hydro's Pickering write-off was debt owing, you knew that wasn't true, didn't you?

MR. ADAMS: That is not correct.

Q. - Okay. And when you say a large element, what amount are you talking about?

MR. ADAMS: The amount I am referring to is contained in note 5 from Ontario Hydro's Annual Report from 1993.

Q. - $410 million, is that the right figure?

MR. ADAMS: Yes.

Q. - Okay. Just need to help me out with one thing. Maurice Strong, he was the Chairman of Ontario Hydro between 1993 and 1995, I think it was?

MR. ADAMS: That is correct.

Q. - And notwithstanding you have been a critic of Ontario

Hydro, you were somewhat complimentary of Mr. Strong?

MR. ADAMS: In many elements, yes.

Q. - And you referred, during your earlier testimony, about giving a presentation in October of 2000 in Halifax. I think it actually might have been November of 2000, but I had the privilege of being there. I certainly enjoyed the presentation. And when I read your material, I went back to that paper that you presented at that conference.

And I would like to read to you from that paper if you wouldn't mind.

MR. ADAMS: Yes. I think your memory is better than mine on the date.

Q. - Okay. This is a paper that you presented in Halifax and I am reading from page 10 and I would certainly be happy to file that page with you if you need to look at it. Would you like to see it?

MR. ADAMS: Read it to me first. I have a fairly good memory of that paper, but perhaps not good enough.

Q. - It said, Mr. Strong -- and I am assuming that is Maurice Strong, also made significant, although incomplete, reforms to Ontario Hydro's accounting practices, reducing their deceptive nature. For example, he wrote off phoney accounts receivable that Ontario Hydro had used to justify its investment in the retubing of Pickering A nuclear

reactors during the period 1983 to 1989.

You used the word phoney accounts receivable in the year 2000, when you wrote that.

MR. ADAMS: Mmmm.

Q. - You said that because you didn't believe it to be a true account receivable. Is that correct?

MR. ADAMS: The difficulty I think we are having here is that the whole relationship between Ontario Hydro and AECL related to the responsibilities under this agreement, were subject to disputes between these two companies.

Q. - Right. And in the year 2000, you formed the view that that was a phoney account receivable?

MR. ADAMS: Ontario Hydro -- this may be helpful. Ontario Hydro, in 1993, took the write-off and explained it publicly saying that under its contractual agreement with AECL, it had no mechanism to recover the funds.

Q. - Right. And Mr. Adams, I have no mechanism to recover the $410 million that I wrote down that you owed me, because you don't owe me a debt. That is a cute way of putting it, no mechanism to enforce, but a debt is enforceable by a legal action. And if it is a phoney account receivable, it is not collectable.

MR. ADAMS: The Pickering payback agreement that was arrived at in the 1960s did not anticipate a long lay-up period

with significant capital costs, like the retubing. So when Ontario Hydro and AECL found themselves in the situation where they had a reactor that is relatively young, but that required very extensive capital requirements, the arrangements that it arrived at with AECL were based on the expectation that the future benefits of the retubing would pay back the debt arising from the retubing investment. What happened in the commercial performance of the reactor after the retubing was the proceeds of the operation, the benefits of operation were not able to repay the debt and so Ontario Hydro was postponing the accounting recognition of this loss for a long period of time. And that accumulated an accounts receivable, but the corporation had no means of realizing that accounts receivable. So in 1993, when Mr. Strong tried to straighten out the books, this was one of the changes he made. Is that helpful?

Q. - Not very, but Mr. Adams, the Pickering agreement, the 1963 agreement involved the payment investment of capital by my client, AECL. And somehow, you have perverted that into being a debt owing from my client to the party that they put the money in. But I don't need to go back to that. You have had your chance to try to explain it. But I just want to keep it simple.

You can't have a phoney account receivable and a true debt at the same time, can you?

MR. ADAMS: I don't accept the suggestion that the way I have described this accounts receivable as a postponed recovery relative to the write-off. I see these as parallel explanations.

Q. - I think, Mr. Adams, that you wanted to suggest that AECL, my client, wasn't worthy of trust and you used the facts that you knew to be false in a way to try to support that view and when you wanted to compliment Mr. Strong, you used what you truly believed to be the case, that that was a phoney account receivable. But maybe that is something for argument now.

I would like to shift to the nuclear asset optimization plan.

CHAIRMAN: Mr. Miller, it seems like a good time to take our mid-morning break. And before we do, Mr. Coon, you had your hand up?

MR. COON: Yes, Mr. Chairman. It is just a small matter, but if counsel for AECL is going to continue to refer to documents that intervenors don't have, we would appreciate you asking him to submit them for ident numbering so that we could have copies to refer to when he is asking questions because he has now referred to two documents

which are not marked for identification and we don't as intervenors, have them, we can't follow in his line of cross-examination.

CHAIRMAN: Mr. Hashey?

MR. HASHEY: I guess there is an obvious answer to that one. Because all we hear this morning is about a big report that something has been taken out of without the opportunity to examine it in its full context and maybe Mr. Coon would (microphone off) that one.

CHAIRMAN: Frankly, Mr. Miller offered to show the document to the witness and he said read it to me. I think that Mr. Miller can read excerpts from words. If Mr. Adams does not agree that those are his words, et cetera, then he can ask that he be shown the document. We can go from there. But to have to make copies of all of these things and pass them out to all the intervenors is a bit of a stretch, I think.

So we will take our 15 minute recess.

(Recess)

CHAIRMAN: NB Power have the responses to some undertakings.

MR. MORRISON: We finally got some paper for the photocopying machine, Mr. Chairman. And yes, we do have the responses. They are all together in one document. So I propose just to file it as one exhibit.

CHAIRMAN: My records indicate that is A-28. Anything else, Mr. Morrison?

MR. MORRISON: No, Mr. Chairman.

CHAIRMAN: Any other parties have anything? Mr. Adams, I don't think your evidence has been given an exhibit number and I think that is probably appropriate to ensure it is on the record. That would be EP-1. Okay. Go ahead, Mr. Miller.

Q. - Mr. Chairman, when we broke I had just asked you, Mr. Adams, whether you are familiar with the Ontario Hydro Nuclear Asset Optimization Plan. I think you said you were?

MR. ADAMS: Generally, yes.

Q. - Yes. Have you read it?

MR. ADAMS: I have reviewed I believe all the documents that were publicly released related to it. But I have not reviewed the plan.

Q. - And the plan calls for the laying up temporarily of certain of their older nuclear units in order to bring their other 12 back to a high level of performance and efficiency. Is that a fair description of the plan?

MR. ADAMS: That is fair.

Q. - Okay. And the plan was done after an integrated performance assessment done by a panel of experts. Is

that your understanding as well?

MR. ADAMS: That is consistent with my understanding.

MR. MILLER: Okay. Mr. Chairman, I have circulated a document that I would like to have marked for identification purposes. It is a portion of Ontario Hydro's 1997 annual report, pages 26 to 29.

CHAIRMAN: Any objection? No. There won't be any objections. We will mark it for identification. And my records indicate that it is identification 14.

Q. - Mr. Adams, on page 5 of your submission you say -- this is your submission which has now been marked EP-1 and I will quote, "Contrary to many public statements by Ontario Hydro and other nuclear interest groups, the closure Pickering A was driven in part by a regulatory safety decision." That is what you said, isn't it?

MR. ADAMS: Yes.

Q. - And you are contradicting the Nuclear Asset Optimization Plan when you say this. Correct?

MR. ADAMS: I don't know if that is true or not because I have not reviewed the Nuclear Asset Optimization Plan.

Q. - You haven't reviewed it fully?

MR. ADAMS: I have reviewed all the documents. I believe I have reviewed all the documents that were publicly released related to that plan. But I have not reviewed

the plan itself.

Q. - Okay. Could I refer you to the 1997 annual report portion which has been marked id 14 and in particular page 27. And the last paragraph on the left hand column it begins, "The good news". Page 27, the left hand column?

MR. ADAMS: Yes.

Q. - Could you read that into the record, please?

MR. ADAMS: The good news in the report was the unequivocal finding that the technology itself was not at the root of Ontario Hydro Nuclear's problems. Nuclear program -- I am not just certain what it refers to again. NPAG concluded that the canadian built and design -- designed and built CANDU reactor is a robust design that is safe and efficient with two primary advantages over light water reactors. The first is on-line refuelling which should naturally result in the CANDUs having a higher capacity. The second is the reactor's use of natural uranium instead of enriched uranium resulting in a lower fuel -- in lower fuel costs. Operating safely and efficiently the CANDU system can and will be very competitive in the market place.

Q. - Okay. Thank you. And it wouldn't be your expectation that Ontario Hydro would attempt to mislead its shareholders in its annual reports, would it?

MR. ADAMS: I have been a longstanding critic of Ontario Hydro's reporting practices in many elements.

Q. - Have you previously reviewed the 1997 Annual Report?

MR. ADAMS: Yes.

Q. - And there is nothing in that report about the refit being an alleged failure, as you say in your paper EP-1?

MR. ADAMS: I think if you were to carefully parse the financial statements that were in the 1997 Annual Report, in 1997 Ontario Hydro reported very substantial financial losses and write-offs. If you were to carefully parse those financial statements you would have a general understanding of the serious costs of the nuclear program in Ontario. But if you were to rely on the verbiage alone, it might not be that revealing.

Q. - Did you have the opportunity to review Myron -- Professor Myron J. Gordon's paper, which was filed yesterday, statement on the refurbishment of the Point Lepreau Nuclear Station?

MR. ADAMS: No, I haven't. I was looking for a copy. It was referred to in the newspaper this morning. I am very interested. I have been a student of Myron Gordon's over the years, not in a formal sense. But I am quite interested in his public statements.

MR. MILLER: Okay. Mr. Chairman, I can take some direction

on this. This has already been filed with the Board. But if -- and I would like to show the witness a portion of it.

I can mark it as an ident document. I don't know if that is necessary since it has already been filed.

CHAIRMAN: Probably if you are going to use it for questioning it probably would not hurt to have it marked for identification, Mr. Miller. That does not mean it is part of -- that we accept it as an exhibit.

All right. The paper -- no, hang on. We have got the purged portion of this paper is still with it. Mr. Hyslop will be on your number.

MR. MILLER: My apologies. Perhaps everyone could just tear off everything that appears after page 18.

CHAIRMAN: Okay. All right. We will mark for identification number 15, the statement on refurbishment of the Point Lepreau Nuclear Station by Myron J. Gordon.

Q. - Mr. Adams, Professor Gordon I see from his résumé attached here has a Ph.D from Harvard University in economics and an MA from Harvard University in economics. And I noticed you mentioned that you were a student, but not in the formal sense, of his work.

Would you recognize Professor Adams as an expert in his field?

MR. ADAMS: Professor Gordon?

Q. - Sorry, Professor Gordon?

MR. ADAMS: I have debated Mr. Gordon a number of times. He is a public figure that comments on electricity matters. I would recognize that.

Q. - Really the -- I had asked you whether there was anything in the 1997 Annual Report that in any way supported or suggested that the refit was a failure. And now I would like -- I would like to refer you to page 15 of Professor Gordon's paper, id 15 I believe it was? Sorry, what was the id number for that?

CHAIRMAN: It is 15.

Q. - And I will just quote from it, Mr. Adams stated, quote, The failed Pickering A refit was one of main causes of Ontario Hydro's financial collapse.

CHAIRMAN: No. Mr. Miller, I -- this is really not -- this is back door proof, as far as I'm concerned. The Board is not -- we have allowed this to be filed with us.

There was no witness called. So we will give it the weight that it deserves. But to use it in this fashion I don't think is appropriate.

Q. - Having read page 15, I just would ask you, Mr. Adams, is there a disagreement between you and Professor Gordon about whether the failed refit was the cause of Ontario

Hydro's financial collapse, as you allege?

MR. ADAMS: I have made my allegations and Professor Gordon has made his. There is a disagreement between us.

Q. - You don't agree with what he has said?

MR. ADAMS: I think he hasn't understood what I have been -- what I was saying. But he expresses disagreement.

Q. - And the next area I would like to address with you is from your paper EP-1, and your comments concerning AECL's continued solvency. Now I realize you are not a lawyer, but you do claim some civil law and prosecution experience.

And I would like to put some questions to you which may address your doubts about the enforceability of the obligations against AECL.

Are you aware that all of the shares of AECL are held in trust for Her Majesty the Queen in Right of Canada?

MR. ADAMS: It's a legal question that I am in a poor position to answer.

Q. - Okay. Are you an agent -- are you aware that AECL is an agent of the crown for all purposes?

MR. ADAMS: The same answer.

Q. - Okay. So your comments on the solvency aren't based on any legal basis?

MR. ADAMS: No. My comments on AECL's solvency are based on

commentary about AECL expressed by the federal auditor and the most recent minister responsible for AECL, Mr. Dhaliwal.

Q. - Okay. And you don't understand what it means, what the legal consequences of being a crown agent are from a contract point of view?

MR. ADAMS: I wouldn't care to comment on it.

Q. - Final question, Mr. Adams. In your paper you acknowledge that nuclear generation has the advantage of not releasing significant amounts of conventional air pollution, including greenhouse gases. Is that correct?

MR. ADAMS: That statement appears in my report and it reflects my opinion.

MR. MILLER: Thank you. Those are my questions.

CHAIRMAN: Thank you, Mr. Miller. Canadian Unitarians for Social Justice? Not represented today. Okay. City of Saint John have any questions?

MR. CAMPBELL: No questions.

CHAIRMAN: Thank you. And Mr. Coon?

MR. COON: No questions.

CHAIRMAN: Mr. Craik is not here. Mr. Gillis?

MR. ALBERT: No, Mr. Chairman.

CHAIRMAN: JD Irving, Limited. Mr. LeBlanc is not here. The Province?

MR. HYSLOP: We have no questions for this witness.

CHAIRMAN: Thank you, Mr. Hyslop. Saint John Energy.

MR. YOUNG: No questions.

CHAIRMAN: Board counsel?

MR. MACNUTT: No questions, Mr. Chairman.

CHAIRMAN: Okay. Mr. Hashey?

CROSS-EXAMINATION BY MR. HASHEY:

Q. - Mr. Adams, sorry, where I'm sitting I recognize that the Board needs to hear your answers and that -- I think we can make that work for us, no problem.

Mr. Adams, your Energy Probe website states about us in large print, "A CONSUMER AND ENVIRONMENT RESEARCH TEAM ACTIVE IN THE FIGHT AGAINST NUCLEAR POWER."

So that is your prime raison d'etre, is it not?

MR. ADAMS: Our prime raison d'etre is cleaner, cheaper power.

Q. - Then you go on to say "And dedicated to resource conservation, economic efficiency and effective utility regulation."

MR. ADAMS: Yes.

Q. - Right. I didn't want to lead you into something. Now on yourself you have commented on accounting matters, particularly in relation to some of Ms. MacFarlane's testimony.

I would suggest to you that you are not a chartered accountant, are you?

MR. ADAMS: No, not at all.

Q. - And you are not familiar with the Canadian Chartered Accountants Association Guidelines on Reporting? You have never studied those?

MR. ADAMS: I have not studied those, no.

Q. - And, similarly, like Mr. Marshall or Professor Gordon, if you like, you are not an economist with a degree in economics?

MR. ADAMS: No, I do not have.

Q. - In fact, I believe your training was more in the sciences?

MR. ADAMS: Yes.

Q. - And, similarly, you are not involved in relation to engineering matters. I mean, you are not -- you weren't trained in engineering and you don't profess to be an expert on construction of nuclear plants?

MR. ADAMS: No.

Q. - And how they are done?

MR. ADAMS: No.

Q. - Now, sir, you are a resident of Ontario, right?

MR. ADAMS: Correct.

Q. - And if the lights go out in New Brunswick you are not

going to be affected, are you?

MR. ADAMS: Yes, I will. It --

Q. - That would bother you?

MR. ADAMS: Yes, it would.

Q. - Your conscience would bother you as a result of you trying to make sure that a nuclear plant isn't here in New Brunswick that is required for the power that we need here?

MR. ADAMS: I'm committed to -- I'm professionally committed to supporting the creation of a reliable inexpensive and environmentally sustainable power system for Canada.

If New Brunswick's power system falls into an operational problem, it is a serious problem for Canada. And it would be a serious concern of mine.

Q. - Who is Dave Golding?

MR. ADAMS: David Golding is currently the CEO of the Ontario Independent Electricity Market Operator.

Q. - And I believe you are on the Board of that organization, are you not?

MR. ADAMS: I was on the Board until February of 2001.

Q. - And you withdrew, did you?

MR. ADAMS: No. I did not withdraw.

Q. - So you just -- your involvement was discontinued for what reason?

MR. ADAMS: Mr. Hashey, that is an excellent question. And although I was a party to that of course directly affected, I can't provide you with a direct firsthand answer.

Q. - Okay. Well, it may not be terribly relevant to this. So I will discontinue that line.

MR. ADAMS: I would be happy to provide what understanding I do have. But suffice to say it is a somewhat murky situation.

Q. - Okay. Well, that is fine. In any event, you are aware that this organization of which you were a director are suggesting in relation to Ontario, and I would quote, "The days when we had lots of new hydroelectric construction going on in Ontario and a gross oversupply of electricity are not there today." Correct?

MR. ADAMS: That is correct. I agree with the statement.

Q. - Right. And you would agree that last year in Ontario the power plants had a total capacity of about 27,000 megawatts and the peak summer demand was 25,000 megawatts, leaving a very small margin of error?

MR. ADAMS: Yes. Ontario has been in a tight supply situation a number of years. We are in a very tight supply situation in 1990. We were tight again in '97. And we are currently tight.

And I expect that we may have difficulties in the next three peak periods.

Q. - Right. And that is exactly what is coming, isn't it? There is a very serious concern, if there is not adequate capacity in Ontario, that there could be brownouts or blackouts?

MR. ADAMS: That is a very serious concern. I have spoken to that concern. The IMO has spoken to that concern. It is an important problem.

Q. - And you are aware that in Ontario, like in New Brunswick, as Mr. Golding says, that many of the private companies that have filed applications to build new power plants in Ontario have yet to turn a spade?

MR. ADAMS: Yes. I'm aware of this problem. There are complex factors that have contributed to this lack of investor confidence.

Without burdening the panel too much unless they, you know, instruct me to go further, I would just say that it is a large and complex problem in terms of acquiring adequate and appropriately deployed investment.

Q. - And you know in New Brunswick as well, I would suggest, sir, that there has been an allowance of about 150 megawatts for power being provided by others.

And at this point we see no signs of any private power

plants being developed?

MR. ADAMS: I understand that your load forecast reflects an expectation of something like you have described. I don't know what you have been told or what impression NB Power has of the developments in the power market.

Q. - Well --

MR. ADAMS: I can't comment on that.

Q. - Okay. We don't see any -- you are not aware of any active ones right now being developed. You are aware of the Irving Oil thing which we have indicated is included, which is still a possibility.

But otherwise there are no immediate signs of any major developments by any private industry that you know of?

MR. ADAMS: Are you making the submissions or asking a question?

Q. - I'm asking you --

MR. ADAMS: What is the question?

Q. - -- are you aware of any?

MR. ADAMS: No. I'm not aware of any.

Q. - Okay. Sorry. That is really what I was asking. I apologize if you misinterpreted the question.

You weren't here at the Load Forecast Hearings?

MR. ADAMS: No, I was not.

Q. - But you were aware of the New Brunswick needs as ruled on by this Board? And you would agree with them?

MR. ADAMS: I'm aware of the needs as ruled on by this Board.

Q. - But you don't agree with this Board?

MR. ADAMS: I'm not -- I can remember reading through the decision of the Board and the comments of the Board and having some concerns. But I can't remember what they were.

Q. - Okay. And in your work are you also concerned with greenhouse gas problems?

MR. ADAMS: Yes.

Q. - And you are aware that in New Brunswick that this is a problem or could be a problem when Kyoto is ruled on or when we have a firm ruling?

MR. ADAMS: It is a risk to the province's power system. This province is more reliant than most in Canada on simple cycle fossil generation.

Q. - Right. And you are aware that, in some of the other provinces that you have dealt with, they are fortunate to have a lot of hydroelectric power created by the dams and by the water supply, such as Quebec, which we don't have in New Brunswick -- or we do have in New Brunswick but on a much limited scale?

MR. ADAMS: Yes.

Q. - And as my learned friend indicated, you are aware that NB Power has an obligation by law to supply power, as you say, as efficiently as possible?

MR. ADAMS: In the Power Act, yes.

Q. - Yes. And you are aware right now that there is a very significant problem in New Brunswick in obtaining gas supplies from existing reserves that are committed?

MR. ADAMS: I have -- I have published commentary on this issue and had the opportunity to interview in the preparation of those publications a number of the principals involved in the gas industry.

And I have come to the opinion that all of the gas discoveries from the Deep Panuke find have not been committed.

So my own view is that the offshore gas reserves on the east coast are relatively undeveloped. They are new fields. And there is an anticipation of very substantial future resources being identified in that field.

Q. - And that is an anticipation that you speak of?

MR. ADAMS: Yes. That anticipation shows up in the forecasts of the National Energy Board.

Q. - And have you had an opportunity to review any of the geological reports that have been commissioned by the

Province of New Brunswick?

MR. ADAMS: No, I have not. But not that it would do much good.

Q. - Okay. Now changing topic, and just clarifying a small point possibly, is in your c.v. you have indicated that you successfully defended an action that was brought by NB Power and Mr. Hankinson.

You were involved in a case that was initiated, were you not, as a result of a report that you published under the -- or on behalf of the Atlantic Institute of Market Studies?

MR. ADAMS: I -- yes.

Q. - Right.

MR. ADAMS: A statement of claim was issued against me --

Q. - Right.

MR. ADAMS: -- by NB Power.

Q. - And you are aware that that action was discontinued after the Atlantic Institute of Market Studies filed a report and published an apology to NB Power and Mr. Hankinson?

MR. ADAMS: The events that led to NB Power's withdrawal of that action against the directors of the Atlantic Institute and myself included an apology from the Atlantic Institute directors and also a letter from myself dated April the 8th 1997 which has the form of a statement of

defence although it is not precisely couched in those terms.

I have copies of that correspondence that I would be happy to provide to you.

Q. - I don't need it. I have it. But that was discontinued, that action. And AIMS, who was the prime problem here, did apologize, did they not, for your remarks?

MR. ADAMS: I was the author of the remarks. And I have indicated to NB Power that I stand by all the comments.

And I have got -- and I provided NB Power with documentation of proof of each of the impugn statements from my reports and public comments associated with that report.

Q. - The action was discontinued. It wasn't a matter that it was successfully defended. It ended, did it not? The action is not currently on. It was discontinued?

MR. ADAMS: When a slap suit is withdrawn against a public interest group such as ourselves, we declare victory.

Q. - Okay. So the name of the game is to comment against people, to accuse them of being liars like you did of Mr. Hankinson or accuse him of misleading the House in New Brunswick.

And then when it is withdrawn, after it is started, you consider that you have succeeded in your mandate. Is

that one of your mandates?

MR. ADAMS: That is entirely incorrect and an unfair representation of our work. Our purpose is to assist the people of New Brunswick in making decisions about its future power system that can contribute to a clean, low cost and reliable power supply.

When we see the utility taking actions that we believe are inconsistent with those objects, we comment on them.

But when -- and this is not the first time, but when we are threatened with a slap suit which is strategic litigation against public participation, our organization has developed legal and financial resources to deploy so that we can continue to pursue our work.

Q. - So that is very interesting, when you say a slap suit. What assets does your organization have?

MR. ADAMS: I'm hesitant to reply to that question.

Q. - Why?

MR. ADAMS: Because it seems to me possible that you are fishing for the next one.

CHAIRMAN: Mr. Hashey, my fellow Commissioners and I wonder where you are going with this particular line of questioning?

MR. HASHEY: Well, there is allegations in his c.v. that there was a successful defence. And where I'm going is to

say it is great to bring an action.

I'm sure there are many instances where no action is brought against them because there is nothing to satisfy any action. So it is very easy to stand out there and make comments and make suggestions, and even come here and making comments and stand outside and make them to the press.

But I just wanted to show that there is reason --

CHAIRMAN: I think you have achieved your --

MR. HASHEY: Okay.

CHAIRMAN: -- result in this.

MR. HASHEY: I will withdraw it. Thank you.

CHAIRMAN: And I would suggest --

MR. HASHEY: I hear you. I hear you. I will ask no questions. And we will end that issue right here.

MR. ADAMS: I was named personally in a statement of claim. It is not Energy Probe. It is myself in my personal capacity.

Q. - That is incorrect. Energy Probe Research Foundation is a party to that action, is it not? I don't need to go any further with this. But I have got the statement of claim here.

MR. ADAMS: Well I don't have the statement of claim or the associated correspondence. So my impression -- my legal

advice was that I was personally on the hook.

Q. - And are you party to the report, the independent report on DSM that was filed with the Board in this matter?

MR. ADAMS: No.

Q. - So you are not aware that it was stated that NB Power has underestimated -- or sorry, overestimated this DSM possibilities as they currently stand?

MR. ADAMS: No. I'm not familiar with that. I would say that there is a range of opinion amongst environmental organizations about the role of utility-subsidized DSM. And I have taken one poll of that debate.

Q. - You have never had to run a business, have you, where serious capital decisions had to be made, strategic decisions which all attach risk?

MR. ADAMS: As a director of the IMO I had a fiduciary responsibility for what I consider to be a very large capital program, a $300 million IT program related to the market clearing engines and associated software for the new electricity market. So I have some direct familiarity with large utility capital projects.

Q. - Right. And you would know that any business venture, even that one that you speak of, does contain some risk?

MR. ADAMS: In that particular case the IT program found itself with significant cost overruns and inservice

delays.

Q. - So you are aware of the risks that any business takes on. And that is part of the responsibility of management, is it not?

MR. ADAMS: I'm acutely and painfully, personally aware of these problems.

Q. - Now if Point Lepreau could be refurbished for nothing you would still oppose it, wouldn't you?

MR. ADAMS: If Point Lepreau was an economic station my concerns with it would not be economic in nature. So if the capital cost was free, the concerns would not be economic.

Q. - And you wouldn't -- but you would still have a problem with refurbishing that plant no matter what the scenario would be, would you not?

MR. ADAMS: I would be concerned. I think that commercial use of nuclear power has a range of implications that relate to security and environment that in and of themselves would be enough for a rational society to choose otherwise than to produce their electricity by nuclear means.

But that is not the subject of my report or my evidence before this Board.

Q. - And you would also agree that emission of further

greenhouse gases has a significant problem for society?

MR. ADAMS: We have a difficult problem figuring out what weight to attach to this problem. But I concur with you that it is a problem and that we ought to take all reasonable measures to avoid greenhouse gas emissions.

Q. - And you are aware of the problems that happened in California and now anticipated in Ontario if you haven't made appropriate allowance for power needs?

MR. ADAMS: Generally, yes.

MR. HASHEY: Thank you. I have no further questions.

CHAIRMAN: Thank you for your testimony, Mr. Adams.

MR. ADAMS: Mr. Chairman, I would like to express my appreciation to Board staff and Board counsel for assisting in facilitating my appearance today.

CHAIRMAN: Fine. Thank you. We will break until -- well, I'm thinking about whether -- do you want to come back at 2:00 or 1:30?

MR. HASHEY: The sooner the better. If we can -- the earlier I start probably the earlier we will get through. And I think we still have a goal that we could achieve finality of the submissions this afternoon, Mr. Chairman.

CHAIRMAN: All right. I think we are going to take a break between having gone around the room once and the second turn, just so the Board has an opportunity to reflect on

what the various parties have had to say and see if there is any further argument we want to deal with that hasn't been touched.

All right. We will come back at 1:30 this afternoon then.

MR. HASHEY: I guess when you say the break you mean that after -- I apologize. I'm just trying to clarify for my purpose in the room, that we will all make our submissions this afternoon.

And then you would like maybe to resume tomorrow when you could raise questions?

CHAIRMAN: Yes. And I might say reconvene, depending on when we rise today -- for instance if we went to 5:00 o'clock, I would probably suggest that we come back in at 10:30 or 11:00 tomorrow morning.

And the Board may well direct your attention to certain things. And then of course you have the right for a rebuttal as well on the argument.

MR. HASHEY: Thank you, Mr. Chairman.

CHAIRMAN: Okay.

MR. HASHEY: That clarifies things.

CHAIRMAN: All right. Come back at 1:30.

(Recess - 11:45 a.m. - 1:30 p.m.)

CHAIRMAN: Mr. Hashey or Mr. Morrison, are you able to -- do

you have any further undertakings that you have to comply with?

MR. MORRISON: I don't believe so, Mr. Chairman. I think we have got them wrapped up.

CHAIRMAN: And Mr. Miller and Mr. MacNutt, have you had an opportunity to chat?

MR. MILLER: We did have that opportunity, Mr. Chairman. And we have agreed to file a further undertaking. And as we speak, the financial people of AECL are putting together the response to that undertaking.

CHAIRMAN: All right. Any other preliminary matters before we --

MR. THOMPSON: Mr. Chairman, there was a request the other day, I believe, and we were interested in seeing the results -- it was either a request from NB Power or, sorry, either the Board or the Province. And it was regarding the unit electricity cost from Lepreau over its lifetime. And I think the -- oh, okay. Thank you. David says we have it.

CHAIRMAN: What did Mr. Coon say?

MR. THOMPSON: We have it. Thank you.

CHAIRMAN: All right.

MR. MACNUTT: Mr. Chairman, to complete the record, it might be appropriate to have the Energy Probe responses to NB

Power information request filed as an exhibit. Currently it is neither an exhibit, nor marked for identification. All of the participants were provided with a copy of it by e-mail attachment.

CHAIRMAN: That's a good idea, Mr. MacNutt. And the responses of Energy Probe to NB Power's interrogatories will be given the exhibit number EP-2.

Any other matters? If not, Mr. Hashey?

MR. HASHEY: Thank you, Mr. Chairman. Mr. Chairman, I would like to thank you and the Board for its indulgence of a very long, difficult and complicated process. The volume of paper that you have had to absorb, and that everybody has had on this has been rather extensive. And I'm sure very time consuming and sometimes difficult.

Also I would like to say that I have great respect for all of the intervenors who have attended. Notwithstanding what might appear to be from time to time a small skirmish. We obviously have different opinions on matters. And I think that they have done a very excellent job on their cross-examination in eliciting the answers that would be required to assist the Board in its deliberations.

Then I would move on to a short, hopefully, submission on the view that NB Power has on the request that they are

making and what we believe supports that.

First of all, I would deal with the issue. NB Power has requested the Board of Public Commissioners of Public Utilities of New Brunswick, who I will refer to as I will others, by the designated initials, as PUB, to recommend the refurbishment of the Point Lepreau Nuclear Generating Station, which is referred to here a Point Lepreau.

Prior to the request, the PUB conducted two load forecasting hearings. And it has been determined that there would be a significant shortfall in the required capacity. And that the capacity of energy from Point Lepreau is required. I think that's a very essential point.

We have had an extensive hearing here. We have heard the volume of evidence which has explained the project. How carefully it was planned. And how carefully the planning was conducted by NB Power, which led to its recommendation to work with AECL. And we have learned that the project is the best available option.

If the project is not recommended by PUB, there must be a realistic alternative. Notwithstanding extensive intervention, no viable option has been brought forward. Absolutely none.

Evidence has been heard on the considerable

uncertainties related to the natural gas option, the risks of which have not been factored into the financial comparison.

Now obviously natural gas was the option that we have talked about, we have considered, we have looked at. And if it was realistic, I think there was a lot of people that would have a choice that we go in that direction. And for reasons stated later, I would suggest that it just is not in any way realistic.

The refurbishment and retubing of Point Lepreau is the best and only viable option to guarantee the power supply required by the residents and businesses of New Brunswick. And we have heard enough said here that we have an obligation at NB Power to supply the needs of New Brunswick. And that's why we are here.

In summary, a positive recommendation will achieve three things. A, it will satisfy the obligations of NB Power to supply the energy requirement of New Brunswick. B, it will confirm that this project is the least cost option. And, C, it would set the stage for possible future equity participation in such projects.

Now I would then like to move on to the issue of the project itself, and make a few comments on that. Firstly, Point Lepreau has been operating since 1983. It was a

very valuable addition to the NB Power Generating System. It operated extremely efficiently, and was a world leader until the mid 1990s when problems were experienced with fuel channels and feeders. A solution to these problems was found. And the plant continues to operate, albeit not at the high capacity it once achieved.

NB Power and its experienced nuclear team has worked very carefully with AECL to develop a retubing and refurbishment plan. The evidence explained in considerable detail how millions of dollars have been spent on defining the project scope and requirements, which have lead to a recommendation, which has been tested to show that a very successful project can be obtained.

A great deal has been said about the initial construction and the intervenors have attempted to cast clouds and doubts on the project.

The fact remains that AECL has been very successful in its CANDU operations and its construction project in the past few years. The technology has advanced and improved since the time when CANDU-6 reactors were actually placed on line, which was many years ago.

Mr. White has given evidence concerning experience in the United States and the organizations which have been specifically created by the utility owners and executives

to share information, both on technology and on human performance. This sharing of information has brought great improvements to the nuclear generation business.

And I would add to that that we have heard an evidence of how the US industry is developing. It's refurbing. And it's setting up for the obvious reasons that I'm coming to.

The additional importance of the project results in the use of an indigenous fuel supply and the zero emissions of greenhouse gases, specifically CO2 as well as SO2 and NOx.

The importance of these emissions is well known to the Public Utilities Board, as has been demonstrated by Mr. Marshall to have considerable economic value as the imposition of CO2 limits is virtually inevitable.

The detailed design and construction project has been explained in considerable detail, is reviewed in summary in exhibit A-16, and was the subject of five days of questioning of Panel A. I think that has been very extensively looked at. And I think the most valuable short summary of that is the exhibit A-16 which pinpoints a lot of points that I won't be repeating here. I would hope that that might be referenced in your deliberations.

Point Lepreau refurbishment is the best and most

economic option to permit NB Power to achieve its legislative responsibility, sorry, to New Brunswickers, as I have said. We have shown about the trend in the United States and Canada, the refurbishment, the life extension and how things are moving ahead even today. We heard of how that is happening in Ontario.

A detailed analysis has been conducted by Mr. Marshall concerning the options available to NB Power to achieve the generating capacity required

Mr. Marshall has very carefully examined possible options, which include the refurbishment of Point Lepreau, demand side management, natural gas combined cycle units, a new Orimulsion unit and renewable generation such as the wind, small hydro and combustible turbines.

After detailed screening analysis, the preferred option was the Point Lepreau refurbishment and retubing. Demand side management has been the subject matter of an independent report that suggested NB Power may not have overstated available options and is therefore really not relevant to the consideration.

The Province of New Brunswick in intervening have suggested that there is little difference between Point Lepreau and a natural gas generation unit. This is before taking into consideration of the CO2 emissions which

clearly are important and weigh very heavily in favor of the nuclear option.

The sensitivity analyses are dealt with in considerable detail in the evidence of Mr. Marshall. And again I would reference our exhibit A-16.

Now the next topic that I will briefly touch upon is the financial review. Vice-President of Finance, Sharon MacFarlane carefully examined the comparison of the options in the financial statement impact analysis for each alternative.

Her evidence clearly demonstrated the Point Lepreau refurbishment option has stronger net incomes, stronger cash flows and stronger ability to service debt. A lot of uncertainties regarding gas prices and more importantly gas availability would be avoided by the recommendation of this option.

It was demonstrated that NB Power can finance the two refurbishment projects at Coleson Cove and Point Lepreau through a combination of cash flow and debt.

Now the next point I would come to that would complete the financial comments in brief, the importance of Point Lepreau to New Brunswick economy.

This may be a little repetitious. I will be short. I think it was better set out by Mr. Galbraith, who frankly

to this moment I have not met or was aware of what he was going to say.

But Point Lepreau employs 700 individuals, many of whom are highly skilled. It very substantially contributes to the New Brunswick economy with an estimate of $95 million actual annual direct spending in this province.

It has allowed New Brunswick and its universities to involve themselves in cutting edge programs. The discontinuance and decommissioning of this unit would have very significant effects on the economy.

It is well known that multinationals control the natural gas industry. A significant aspect of a gas plant would be fuel costs, the benefit which would not be realized in New Brunswick. And as I say, Mr. Galbraith has expanded further on that point.

The next issue which I will touch on again -- hopefully all these issues will be briefly dealt with -- is the need to refurbish. And I would say that to try to summarize in a short half-hour presentation all of the evidence is obviously impossible. And we are just trying to hit on the high points of what has come out in the evidence before you, both in writing and verbally.

The need to refurbish. An extensive condition

assessment has been done and filed with you. NB Power believes that 2006 is the end of reliable life for Point Lepreau.

Without an alternative service in place to provide a reliable source of energy, it would not be rational to extend the life of Point Lepreau. A financial analysis on the operation of Point Lepreau beyond 2006 would be meaningless. The chance of continuing to operate Point Lepreau past a definite end of life date is weak.

There is a high probability that difficulties would occur in the retention of key licenced staff. The difficulty of obtaining new personnel would be impossible due to the training and licencing requirements for a specific job that has no longterm future.

Further significant decommissioning costs would be accelerated. And I think all of those points were touched on in considerable detail by Mr. White.

Now the next thing I would like to go on -- and maybe it is a bit anticipatory, but I don't think so. I think the areas of question have been raised by the intervenors. And I would like to discuss what I think were concerns expressed before you here and see if I can answer some of those concerns.

The first concern that I would address is the

questions that have been raised on the ability of AECL to perform. And I recognize Mr. Miller will be dealing with this in more detail than I will be here possibly. But I would make the following comments.

The evidence has demonstrated that AECL has a strong organization and has made significant advancements in nuclear technology. Their CANDU nuclear plants have performed very well. Admittedly in earlier plants there were problems which developed concerning the tubes and garter springs which are reparable through the 2006 season.

Since 1983 a great deal of experience and additional expertise has been gained by both AECL and NB Power. The witnesses have shown an extensive degree of care in reviewing possible risks. The proposed project has a very high probability of success.

Attempts have been made to demonstrate that there are large risk areas. The key is that these areas have been identified and are being managed to minimize impact. It would not appear to impose any significant additional requirements over the 35 million contingency which has been included in the overall project cost estimate.

There has been a great deal of evidence on that. And I think hopefully that has been satisfied to show that a

very reasonable and very, very careful review -- we talked a lot about that Ernst & Young report and all of the things that were said.

Well, I think that really that should be turned around to say that that is just how carefully this whole issue has been examined. It has really been examined extremely carefully.

The next issue is the contract issue. And I will touch on that as well. The details of contract negotiations were carefully examined by a number of intervenors.

It has been demonstrated by Mr. White and the other witnesses that lengthy negotiations have led to contracts for retubing and refurbishment. These contracts have reasonable guarantee provisions, and most importantly have AECL agreeing to fixed terms and payment provisions -- four of us read this brief at noontime and I finally found another typo, anyway -- which will avoid substantial risk associated with cost plus arrangements.

The evidence of both NB Power and AECL is clear that the parties assessed the risk over which each party had the ability to manage and mitigate.

Through lengthy negotiations the parties concluded agreements which appropriately allocate these risks. And

I think this is a key point. The economic analysis of the project is based on the contracts that have been signed and not on contracts that might have been signed.

The uncontradicted evidence of Point Lepreau is that the warranties are more favorable than the industry norm. The contracts also contain compelling incentives to AECL to meet the contract schedule, which Mr. White explained was important in what they were trying to achieve.

And on one smaller point here possibly, the intervenor Mr. Craik has alleged that the basis for the payments out of the plant performance agreement has been changed from capacity factor to availability.

That is not the case. From the outset the parties agreed that the basis of payment would be availability. The evidence demonstrates that available generation as defined in the plant performance agreement is equivalent to capacity factor.

A careful examination of the plant performance agreement reveals that "outages" are excluded from available generation. The operating licence for Point Lepreau provides that a failure of an electrical connection to the provincial electrical grid for a period exceeding two hours results in an outage at the plant. And I think that is a key point. And that is one of the

matters that was addressed in an undertaking.

And finally, these contracts are the product of lengthy negotiations between two highly skilled and experienced negotiating teams. The implication that a different deal could have been negotiated is pure speculation, not supported by evidence.

The intervenors are in effect suggesting that the Board engage in micromanagement and substitute its business judgment for that of the negotiators, which we don't think is really appropriate.

Next issue, the government guarantee issue. Significant questioning took place by Mr. Gillis concerning a challenge to the role of the Federal Government and AECL. The evidence has demonstrated that AECL is an agent of the crown. And opinions were obtained both verbally and in writing demonstrating that the Government of Canada as principal is bound for the contractual obligations of its agent.

Mr. Gillis attempted to make points concerning the enforceability of a guarantee, but the fact is that no direct guarantees are being entered into other than which is contained in the contractual obligations which the Federal Government as principal is obligated to honor.

And I know this is an issue that Mr. Miller will be

able to give you more detail possibly than I can, since he has opinions, et cetera.

Next issue from the intervenors is the CO2 issue. It is interesting that few if any intervenors have concentrated on this issue which is very much in support of this project.

A great amount of time was spent opposing Orimulsion plants on the basis of CO2 emissions by the same intervenors who are now selectively choosing to ignore the implications.

A nuclear generating facility does also provide for Point Lepreau diversity in its generating facilities, which has been important in maintaining stability and certainty of supply.

In recent times a great deal has been said about the greenhouse gas effect and the return to the emphasis on the nuclear option which should not be ignored in New Brunswick.

We have heard that. We have seen a lot of recent things coming out of Ontario which is recognizing that there is a greenhouse problem and I think relates partially to the return or their intent to return to service of a lot of their nuclear plants.

Next issue is a smaller issue possibly, but one we

should touch on. And that is the export issue. Suggestions are made by the Conservation Council that by restricting exports and running other plants such as Grand Lake -- such as running the Grand Lake plant longer, can avoid the need for this refurbishment.

Mr. Marshall dealt with this in cross-examination. And he indicates that this argument does not stand up, as supply obligations exist which outlive this plant's life and which must be honored.

It is further interesting to note that in future consumption estimates there has been a reduction of 150 megawatts for private generation and significant provisions for displacement of electric load by natural gas.

Again at this hearing there has been no evidence led that there will be such loss of load or that these numbers are in any way inaccurate. What this suggests is that this may be an overstated estimate, as was the case in DSM, which can only lead to greater needs within the province which can only be satisfied if Point Lepreau is refurbished.

The next issue is one that has come from more outside here than inside, although it was an issue dealt with, and that is the cost of the project. Very briefly on that,

certain intervenors have attempted to demonstrate huge project costs without regard to accurate evidence.

Attempts have been made to add all future operating and capital costs for more than a quarter of a century. Regard has not been given to the value of money and what the comparable costs of alternatives would be when calculated on a consistent basis. In other words, if you started to total up all natural gas you would be way in the sky above this option on the review.

The next and final comment that I would make on the intervenors' points is one dealing with the delay of the project. The witnesses have demonstrated that a delay in refurbishment is not a viable option. The plant should continue through 2006 using the planned maintenance program.

Beyond that time, Mr. Groom has stated that problems are anticipated and that therefore the intended and carefully planned refurbishment in conjunction with Coleson Cove will be necessary to maintain the needs of New Brunswickers.

Evidence has been led that employment in the nuclear field is competitive. If it is announced that Point Lepreau has no future, there will be a significant question as to whether the highly skilled workers can be

retained so as to operate through 2006. If this takes place there will be very considerable bonuses necessary.

If key positions cannot be maintained, an earlier than planned shutdown could occur. The results of this eventuality, and with Coleson Cove facing a shutdown to refurbish, are very obvious.

I think the telling evidence on that, and not evidence but submission, came from the trade unions yesterday who dealt with it and emphasized this problem, that we certainly don't want to overestimate here, but it is obviously a serious concern.

Next issue is the issue of alternatives. And this will be the final before concluding. I think the key here is that no useful evidence has been filed which would support an alternative.

The only evidence dealing with this issue at all came from our friend from Energy Probe who we heard this morning. They have suggested the possibility of purchase from Hydro Quebec and other suggested things which have been answered by Mr. Marshall very clearly, and I should point out not rebutted at all by Mr. Adams this morning.

We believe that Mr. Adams' critique of NB Power's financial stability is flawed and outdated again. Ms. MacFarlane showed that we were working from 1994

figures quite different and answered those in evidence. So I won't go into details because there was no real argument about that today.

Next I would speak about some of my friends, the intervenors, and in no way attempting to be critical of the good job and good work they are doing.

Mr. Coon on behalf of the Conservation Council conducted the most lengthy cross-examination and attempted to discredit the nuclear option. Mr. Coon also opposed Coleson Cove and had emphasized DSM until the independent report was filed.

Mr. Coon has offered no constructive evidence or alternatives, and publicly outside the Board hearing was making inaccurate statements on the total cost of the project.

Little attention was paid to the CO2 problems by Mr. Coon in his hearing, where only a short time before, this was the major area of emphasis in the proposed Coleson Cove Refurbishment Hearing.

Mr. Gillis and Ms. Flatt examined alternatives, being windmills and tidal power, which were shown by Mr. Marshall simply not to be feasible. Neither entered evidence in support of these projects, but merely had them examined. And of course Mr. Gillis who you know is a good

friend of mine, his -- I was interested in reading Mr. Gordon's note which is part of the argument or submission, where I think he straightened out Mr. Gillis on one thing without saying so, when he indicated that the ordinary generating plant might be considered to be a car but when you look at Point Lepreau, this is an airplane, not a car, which I thought was an interesting comparison, we have heard so much about cars here.

Comparisons -- then I would carry on with the final point on this and it principally deals with the natural gas option which is the area that we were looking at and have to compare.

Comparisons were made with a natural gas option. As indicated, without CO2 considerations there are some comparabilities. However, there are even greater concerns with natural gas which were summarized by Mr. Marshall in his cross-examination by Mr. MacNutt.

The serious questions over gas availability include the following. A, gas which is currently being produced by the Sable offshore energy producers is all contracted through existing contracts. B, increased production is not yet proven. C, production of offshore sites of proven reserves is projected to run out prior to 2020. D, flowing gas north, if possible, will cost full Boston

price which is about 20 percent higher. And, E, there has been a slow down in the construction of New England gas based power plants because of lack of projected economic return, which should tell us something.

Within the limited gas availability we would doubt that the environmental groups would want an Orimulsion alternative, which is the only next alternative. And as we have said many times before, the one thing about NB Power, they have themselves focused and we are very fortunate in this province, I would suggest, by having a number of alternative methods of producing power. We are not reliable on any one and I think this is maybe something I haven't mentioned in the written comment, is that it seems to me as a New Brunswicker it's nice to have plants, we do have hydro and we know that we have very dry summers and a difficult time with the power coming from hydro, and certainly in the winter time, it's nice now that we have an Orimulsion plant coming on site and we have the plants in the north which are reliable on some of the other non-renewable resources. And this plant does add I think that nice bit of protection for us.

Another point, without taking too much of a shot at my friend, Mr. Hyslop, but PNB has cross-examined in a manner leaning very favourable to gas options. We have heard

that. And I think it's very unfortunate that the Province of New Brunswick, if they are leaning that way, have not come forward and provided us information on gas availability and really have presented you with no evidence to assist you in your deliberations in support of if there is support for that option, which we are not sure until we hear my friend's comments.

I would conclude, NB Power has an obligation to supply power to its customers. Without the current supply from Point Lepreau, there will be a very serious deficiency. Environmental needs will be met through the planned Point Lepreau refurbishment. Employment and economic advantages in this area will continue. And finally the Public Utilities Board is an economic regulator. Its role is to evaluate the best economic choice and make a recommendation. The evidence has indisputably established that Point Lepreau is the best economic choice for New Brunswickers and it is respectfully requested that a recommendation be made that the refurbishment project continue through its completion in the manner proposed to you. No viable option has been demonstrated to exist within the relevant time frames.

Those are my initial comments, Mr. Chairman. Thank you.

CHAIRMAN: Thank you, Mr. Hashey. Mr. Miller.

MR. MILLER: Thank you, Mr. Chairman. AECL applied for and was granted formal status to intervene in these proceedings. And the purpose of AECL's intervention was as follows. It was to provide evidence to the Board on AECL's CANDU division's experience in managing Candu electric power projects as a general contractor. And because that has generally occurred overseas and not domestically, we had Dr. Kugler appear and give testimony and we believe his testimony speaks for itself.

The second reason was to respond to the Board and to be subject to cross-examination by the intervenors who wish to inquire into AECL's capability to carry on power projects on time and within budget. And again we think the evidence speaks for itself on that.

The other reason was to participate in the process and ensure that accurate and reliable evidence is presented to the Board for the purpose of its deliberations and recommendations. It has a statutory obligation to make.

And finally, we have also appeared to support NB Power's application.

I would like to address the matter that Mr. Hashey spoke about and that's AECL's status as a crown agent, and the legal consequences that arise from that. We are aware

from Mr. Gillis' cross-examinations, that he was concerned that warranties and liquidated damages should be guaranteed by Her Majesty the Queen in Right of Canada.

Now our submission is that in light of AECL's status as a crown agent for all purposes, the concern of that intervenor is not well founded and as a matter of law it would be inappropriate for Her Majesty the Queen to guarantee her own obligations. The legal effect as a matter of law, is that AECL is an agent of the crown and a guarantee is a promise to answer for another's obligation, another person's obligation. And as I will explain more fully, the obligations of AECL are obligations of Her Majesty the Queen and therefore a guarantee is unnecessary and we would suggest any suggestion to the contrary is not correct.

Now AECL did file the opinions of the -- Mr. Trotman, the general counsel of the Federal Department of Justice which were issued to AECL and made available for use by NB Power and the Board, and his opinion was that the Point Lepreau retubing and refurbishment services and plant performance commitments are valid and enforceable against AECL and will be valid and enforceable against its principal, Her Majesty the Queen in Right of Canada.

It may be unnecessary to go further than that, but if

the Board would like, I could run through the analysis very quickly.

Under the Nuclear Energy Act, Section 2, AECL is designated as a company within the meaning of that act. In fact AECL was originally incorporated under the auspices of Section 10(2) of the Automic Energy Control Act and it is in addition to being referenced in that legislation, it is a schedule 3 crown corporation under the Financial Administration Act.

And Section 96 of the Financial Administration Act says, an agent corporation may exercise its powers only as an agent of the crown. And Section 97 of the same Act says an agent corporation may enter into contracts in the name of the crown or in the name of the corporation. In this case the agent corporation, AECL, has entered into the contracts in its own name. However, in light of that applicable statutory provision the retubing agreement, the refurbishment agreement and the plant performance agreement are binding on the federal crown even though they were entered into in the name of AECL.

In fact this provides additional protection to NB Power. Professor Hogg who is a well known expert in constitutional law has written a text on the liability of the crown, and I would like just to quote a passage from

page 260 of his text "Liability to the Crown". He says, "the general rule is that an agent is not personally liable under a contract made on behalf of the agent's principal. If there was no exception to that general rule an agent of the crown would be immune from liability in contract. Any contract entered into as an agent of the crown would be binding on the crown itself and not the agent. However, if the agent contracts personally as well as on behalf of its principal, then the agent will be liable as well as the principal."

So in view of the evidence filed and the legal principles applicable, there is in our submission no doubt that the contractual obligations of AECL are equally the contractual obligations of Her Majesty the Queen and a further guarantee is not only unnecessary, it would be legally inappropriate.

The second area I would like to address is just the point that this proposal, the retubing and refurbishment plans build on proven technology. From the questioning of several intervenors they seem to be suggesting since this is a proposed first full scale, that is all 380 pressure tube and Calandria tube retubing, that it should be considered new technology or prototype, and they seem to imply that NB Power and AECL have not adequately managed

this risk. We just want to emphasize that the evidence shows that the process contemplated is a repeat process. It has been done in the past and it's based on proven technology.

We also wish to emphasize that there is a further three-and-a-half years before the project is implemented where the parties have the ability to build on their existing experience.

Dr. Kugler addressed this point specifically in his testimony at page 1524 of the transcript. He was asked this question, and I believe the question was from the Conservation Council, "So really what you are planning to do at Lepreau then is something new in doing a complete job there." His answer was, and I quote, "It is new in the sense of the way it is being done in its entirety. If you break up the job into specific tasks it is not new because they have been done."

The third element I would like to address is the risk analysis and mitigation strategy that has been conducted, and Mr. Hashey addressed most of that. But I would like to point out that as a participant in the Phase 1 process, AECL submits that NB Power conducted an appropriate and detailed analysis of the risks and appropriate mitigation has been undertaken and will continue to be undertaken.

By the questioning, no intervenor seems to be seriously suggesting that not enough planning has been done. In fact, it was the detailed planning and probability analysis that turned out to be the main focus of intervenor questions. For example, I refer to exhibit A-23. So as I say I don't believe the intervenors are saying you planned too much for this.

They may be saying that you planned an awful lot and you considered a lot of the risks. As I say in their questioning they asked many, many questions about those risks that were identified.

The next point is NB Power's contracting strategy. And I start out by saying that in an ideal world electric power would be free and there would be no air emissions. Nuclear power only achieves one of those ideals. To construct or refurbish a nuclear power plant involves contracting with parties. And the parties in this case have negotiated contracts.

We are of the view that the test that should be applied is not whether these contracts are ideal, but whether they are reasonable. Whether they will work in the real world, not the ideal world. And not based on Murphy's Law or hypothetical worst case scenarios.

Now unless asked by the Board, we won't go into the

specific points on the contracts that have been raised by the intervenors, but just wish to say that the culmination of the negotiations led to the three principle agreements which are before the Board. And as I said, the question is in their totality are the contracts reasonable.

To pick and choose among the items in the contract may upset the balance which is customarily achieved when two sophisticated parties with comparable levels of bargaining power and complementary interests enter into contracts.

I do wish to just speak very briefly on the warranty provisions. The retubing agreement contains a warranty provision that involves a warranty of 24 months, plus an additional 96 months, that is 10 years, for the welded feeder connector, fixed pressure tube spacers and seamless Calandria tubes. And it submitted that the evidence shows that these warranties meet or exceed industry standard.

In fact, AECL had a commercial interest in maintaining and not publishing the 96 month warranty set out in Article 2.40.1 of the retubing agreement on the basis that it exceeded industry standard.

And as Mr. Hashey alluded to, Mr. Gillis in his questioning thoroughly examined most witnesses on the warranty provisions of the respective vehicles, and I take what was notable from that was that no witness expected

the warranty to be in place for the full life of their vehicles. That would be unreasonable.

The other point we wish to make is that words on paper and threats of lawsuits only go so far in making a contracting arrangement work. What is perhaps even more effective is ensuring that parties have complementary interests and mutually benefit from achieving the goals the parties set for themselves.

And we would suggest as a participant in the process that this has been done in this case. NB Power is an experienced operator of Point Lepreau with a highly skilled work force. And based on AECL's experience offshore, it has an impressive record as a turnkey supplier of delivering completed CANDU electric power projects on time and within budget. And as such there are complementary interests that are served by the skills of the respective parties.

AECL and NB Power have mutually conducted an extensive condition assessment and they fully understand the scope of the work to be done to achieve the project goals.

So on that point we would suggest that rather than micromanage, the question should be, in their totality do the contracts represent reasonable terms.

Just two more quick points. The environmental costs

considerations and particularly -- and in particular clean air. Now the release into the air of Greenhouse gas emissions which is a byproduct of fossil fuel based energy production has present and future cost implications for power utilities.

Nuclear and other renewable energy sources have great potential for cost effective carbon dioxide emission management. And as has been demonstrated by the direct evidence of New Brunswick Power, when the CO2 costs are factored into the analysis on this project, the refurbishment of Point Lepreau makes abundant economic sense. And we would also suggest it is the -- having a nuclear power in -- a nuclear power plant does support the important goal of having a diversity of production within the province.

So just in closing, Mr. Chairman, I would like to say that it is a privilege to be an intervenor in these proceedings. And I would also like to compliment the other intervenors who have participated fully in these proceedings.

Their questions demonstrated a high level of skill and decorum and respect for the process. And that helps fulfil the goal of ensuring that this Board has accurate and reliable information upon which it can fulfil its

statutory duties. With that I would like to thank the Board and the other participants in this process.

CHAIRMAN: Thank you, Mr. Miller. I think we will take a five minute recess. And after we come back it will be Canadian Unitarians for Social Justice.

Just a couple of housekeeping items before I call on Ms. Flatt. I had indicated that we should mark the evidence of UNBI as an exhibit just so that it is on the record in this particular proceeding and I had neglected to do that. I would like to do right now. And it will be UNBI-1.

The second thing is, Mr. Hashey, during the next break I would like you to take a peek at the transcript from June the 13th at page 1456. And Commissioner Sollows has pointed out to me the exchange between him and Ms. MacFarlane. And he had anticipated that Ms. MacFarlane had made an undertaking in reference to what is set forth on that page. And I would just like you to take a look at it.

MR. HASHEY: If there is something else outstanding we will certainly respond quickly. I apologize.

CHAIRMAN: I will just read it. "Ms. MacFarlane: I just want to emphasize again that the maintenance costs become almost irrelevant here. It is the cost of the plant going

down and the risk of the plant going down and leaving New Brunswick without energy. That was really the key matter."

Question: "I guess I would sort of like to see the numbers?"

Ms. MacFarlane: "Okay."

So, you know, it is not really -- it wasn't crystal clear to anybody I don't think.

MR. MORRISON: Obviously one that we missed, Mr. Chairman. And I will just address it.

CHAIRMAN: Okay. Great. Thank you. Ms. Flatt, go ahead.

MS. FLATT: Thank you, Mr. Chair. For the record, Gordon Dalzell from the Citizens of Coalition for Clean Air and myself from the Canadian Unitarians for Social Justice have prepared this joint final presentation for the hearing.

Mr. Chair, Members of the Board, the Canadian Unitarians for Social Justice in Saint John registered as formal intervenors for these hearings in hopes that we would as a face based social justice and environmental group be able to uphold and promote our principles of which respect for the inter-connected web of life is paramount. From this perspective we do not believe that Point Lepreau should be refurbished for two basic reasons.

Firstly, in a world growing ever more volatile and polluted, the production of more nuclear waste is irresponsible to the earth and its citizens.

Secondly, the devastation to all life that could happen in an unforseen accident is not worth any money, any power or profit from that power, ever.

The Canadian Unitarians for Social Justice in Saint John and our colleagues, the Saint John Citizens Coalition for Clean Air understand and indeed have heard over these past weeks NB Power's intentions to serve the citizens and industries of New Brunswick in the most economical and responsible way possible.

We applaud the goodwill of all parties involved, but find their actions often misguided and unrealistic. Economically speaking, the numbers simply do not add up. This project is a money pit with no end in sight.

The expense to the citizens of New Brunswick far outweigh the benefit of this project. We disapprove of the practice of separating the cost of refurbishment from solid waste management, from decommissioning, from final disposal.

A responsible analysis of the real cost of refurbishment which could potentially reach four billion is needed. The people of New Brunswick need the facts,

not fancy math.

Another point that needs to be made is that nuclear power is only one part of an entire cycle that includes mining and refining through to waste disposal. During this costly and subsidized cycle, considerable pollutants are emitted into the air and water. Fossil fuels are indeed burned in this process and radioactive gases released. This power source is neither green as some may claim, nor is it cheap.

As well, we do not feel that the real viable power options have been analyzed properly. From our own line of questions for Panel B we discovered that wind generation which ranks ninth in the power cost comparisons actually ranked fourth or better upon recalculation using larger generators and government initiatives.

The production of clean renewable energy to serve our province and indeed to make money for the benefit of all is not being actively pursued.

We appreciate that NB Power believes it is acknowledging the need for sustainable clean energy sources, but they are only talking the talk, not walking the walk. Now is the time, not in 10 years.

The decisions facing this Board will impact New Brunswick economically for hundreds of years. The choice

seems clear, rebuild the dinosaur or embrace sustainability. The economics point us to the right path. For the next seven generations, if not for ourselves, we need progressive informed leadership with a holistic perspective.

We are confident this Board's decision, if only from an economic perspective, will be a large step towards economic sustainability and responsible environmental stewardship. Thank you.

CHAIRMAN: Thank you, Ms. Flatt. Okay. The City of Saint John? They have gone home, I guess. Okay.

Conservation Council, Mr. Coon.

MR. COON: Thank you, Mr. Chairman, Commissioners. As the Board noted in its decision concerning the updated load forecast in the last hearing, this hearing has been convened to look at the best way to address the shortfall in capacity to meet in-province load for the next 10 years when Point Lepreau reaches the end of its life in 2006 by way of either additional supply or a reduction in load.

It's not a hearing about how best to replace the energy -- the total energy and capacity of Point Lepreau, but how best to meet the shortfall in a way that is cost effective and minimizes the financial risk to New Brunswickers and ratepayers.

What exactly is the shortfall in capacity to meet the in-province load, that's the question to start with I guess and Mr. Marshall in his evidence and under cross-examination says the shortfall will be in fact 304 megawatts in 2006 when Lepreau reaches the end of its life. And that that will rise to 428 megawatts by 2011, so what is the best way to address this 304 megawatt rising to 428 megawatt shortfall in capacity after Lepreau reaches the end of its life. That's the question.

Mr. Marshall further agreed that the 300 megawatt capacity shortfall is actually a shortfall simply in the winter months. In the June 10th transcripts you will find that, something also that Mr. White pointed out during cross-examination.

They also agreed then that NB Power's existing generating resources without Point Lepreau are adequate to meet in-province load during the spring, summer and fall. So this winter shortfall we are dealing with then, according to Mr. Marshall, is primarily explained by the need for electric heating, lighting and additional cooking.

So what we are dealing with here is how to meet a winter shortfall in capacity to supply New Brunswickers with electricity to heat and light their homes at the end

of Lepreau's life in the most cost effective manner in a way that carries the least risk to ratepayers and taxpayers and minimizes the financial exposure.

Now the winter shortfall in capacity, as it turns out, is actually not quite a shortfall to simply meet in-province load. As Mr. Marshall indicated during cross-examination, 220 megawatts of that roughly 300 megawatt shortfall initially is to meet out of province loads, firm export contracts, 200 megawatts to Hydro Quebec and 20 megawatts for Maritime Electric.

So it's not strictly in-province loads, but recognizing that we have the numbers before us in terms of what the winter shortfall will be. And how to meet that from an economic perspective, in a cost effective way with the minimum of risk is either through reducing load or increasing supply or some combination of the two is a very different question than the one NB Power has routinely raised, which is how to best supply the total capacity and energy output of Point Lepreau after it reaches the end of its life.

So with respect to reducing load, what have we heard? Where we start I think here is what could NB Power do to reduce its load by 2006 and further on by 2011. The evidence in the Generic Hearings and Load Forecast

Hearings indicate that NB Power's in-province load can be reduced in essentially four ways I think were outlined. One was industrial customers can choose to generate their own electricity, which reduces NB Power's load.

Industrial or wholesale customers will be able to choose an alternative electricity supplier, which will reduce NB Power's load.

Natural gas displaces electricity for heating. That also reduces load. And then fourth, when residential, general service or industrial customers implement energy efficiency improvements or adopt conservation practices, that reduces load.

Now NB Power has built into its load forecast which the Board has accepted, its expectations as to what kind of load reductions will likely occur as a matter of course from industrial customers generating their own power, customers choosing alternative suppliers, competition from natural gas and naturally occurring energy efficiency. However, NB Power has not supplied any evidence which -- in terms of what it would cost the utility to induce load reductions above and beyond what it has included in its load forecast to address the projected winter shortfall following the end of Point Lepreau's life.

Let me just choose one of these four options for

reducing load. Energy efficiency is a case in point. NB Power's analysis of the energy efficiency potential filed in evidence for the hearings in the updated load forecast identify 337 megawatts of economically attractive energy efficiency among its three main customer classes.

Now they incorporated about 61 megawatts of that into the load forecast as naturally occurring efficiency that would happen without any inducement, which leaves about 276 megawatts of economically attractive energy efficiency in the ground as it were. Now whether NB Power's estimate of the magnitude of naturally occurring energy efficiency is optimistic or not is really unimportant to my point here.

The point is NB Power provided not one shred of evidence as to what its expenditures would have to be to administer and operate energy efficiency programs necessary to get that economically attractive energy efficiency out of the ground.

We know that in Vermont it is costing Efficiency Vermont the equivalent of 3.6 cents per kilowatt hour Canadian to get such economically attractive energy efficiency out of the ground there. But NB Power provided no such evidence for New Brunswick. So the problem here is we cannot compare the economics of reducing load

through NB Power's expenditures in energy efficiency programs versus NB Power's expenditures in building wind turbines or gas plants or rebuilding the nuclear reactor at Point Lepreau.

The cost estimates for reducing load through energy efficiency improvements that NB Power did supply in evidence as they pointed actually represent the evidence -- the investments of their customers, not expenditures of the utility.

I think the point is if there is economically attractive energy efficiency in the ground, it doesn't matter what NB Power's residential, general service or industrial customers choose to spend on getting that efficiency out of the ground. What matters is what it costs NB Power to induce them to take that action. And that that is the cost which you can compare against NB Power's cost for providing new supply. The same can be said for inducing customers to switch to gas, generate their own power in the industrial sense or seek an alternative supplier.

So as we don't have this evidence before us, despite requests on our part, it's impossible to make the necessary evaluation here on reducing load and that leaves us simply to evaluate the supply alternatives, which is

what I will move on to.

So the question then is what is the best supply alternative to meet the shortfall in capacity of 304 megawatts in 2006-2007 that winter, when Lepreau reaches the end if its life.

Well the question really that we dealt with extensively or NB Power did was is it to attempt to salvage operation of the nuclear plant and breathe new life into the reactor to put 635 megawatts back on the system or should a new generating facility be built with enough capacity to meet the projected shortfalls in 2006 and anticipated to rise out to 2011. NB Power suggested the most viable option to compare their preferred one against was the 400 megawatt combined cycle natural gas plant.

So the question is which of these two options, refurbishing Point Lepreau or constructing a new 400 megawatt combined cycle natural gas plant, is the most cost effective supply option with the least financial risk for New Brunswick.

NB Power argues that their first choice would be to rebuild Point Lepreau at the end of its life. They propose to rebuild the nuclear reactor and refurbish it in about 17 months at a cost of $933 million. In 2001

dollars that's the 633 million capital cost plus the 300 million in replacement power or in 2006 dollars, we are talking about an estimate, according to their numbers, of 1.2 billion which is the 845 million in capital, plus the 344 million in replacement power.

Now they argue this is the best option despite the fact interestingly enough or the assertion of their former CEO Mr. Hankinson, that Point Lepreau -- quote "Point Lepreau is too big and always has been too big for the NB Power system." And he made these comments in the Board minutes of February the 23rd back in 2000.

Mr. Marshall under cross-examination even agreed with me that there would be some advantages to having a smaller unit on the system in terms of reducing the need for operating reserves and installed capacity reserves. And that's in the June 10th transcripts. So of course, the 400 megawatt gas option obviously provides you with a smaller unit than the Lepreau option.

Interestingly enough, Mr. Marshall also indicated in his evidence for the Coleson Cove refurbishment that a refurbished Point Lepreau actually results in lower capacity factors at Coleson Cove which would work against the high costs of the Orimulsion conversion.

NB Power argues its second choice to meet the

shortfall in generating capacity in 2006 would be to build the 400 megawatt combined cycle natural gas plant at a cost of $399 million in 2001 dollars or $436 million in 2006 dollars, which in response to our interrogatories on the lifespan of such technologies they assured us could be expected to operate for 25 years.

Interestingly enough, in the event that their load forecast over-estimates generating requirements for 2011 by say 400 megawatts, which was their low load forecast sensitivity figure, NB Power says then the least cost option for New Brunswick would be to build a 100 megawatt combustion turbine, invest in demand side management and develop some small hydro generation and wind turbines.

While acknowledging the cost of reconstructing Point Lepreau would be much higher than building a brand new combined cycle gas plant, NB Power claimed the lower operating cost of a reconstructed nuclear power plant, would give it the overall advantage over a gas plant. So we need to look at these two components, the actual project costs they are estimating and the operating costs to evaluate these two supply alternatives.

Now an attempt to salvage Point Lepreau would have the two major cost components, the capital costs of reconstruction and refurbishment and the cost of

replacement power to meet the winter shortfall that would occur during that project.

The problem from the evidence that we have before us here are really the unknowns. They are not simply risks, but unknowns. What will -- I'm losing my -- (technical difficulties).

CHAIRMAN: Try it now.

MR. COON: There we go, thank you. So as I was saying, the interesting point with the refurbishment option is the question of the number of unknowns, as opposed to the straight-forward risks. What will it actually cost to complete the work, and how long will it take.

How long it will take, of course, translates into costs with respect to replacement power. Now of these things is particularly clear in Lepreau's case.

If the decision were made to go ahead with the reconstruction of Point Lepreau, the shortfall in capacity to meet in-province and firm export loads at the end of its life would be filled through replacement energy. Panel A estimated the replacement energy costs to be about $344 million in 2006 dollars to meet the shortfall if Point Lepreau can be reconstructed after 18 months. Any delays would increase the need for replacement power and hence increase the overall project costs accordingly.

In the case of building a new combined cycle gas plant, both Panels A and B stated that the power plant could be brought online before the end of Point Lepreau's life in 2006. So no replacement power would have to be acquired during construction of the gas plant because Lepreau would still be running and therefore there would be no shortfall in generating capacity.

When contemplating a comparison between the project costs for Point Lepreau we must include both the capital costs of reconstruction and replacement power costs and the associated risks of time delays, while the project costs for the gas option would simply be the capital costs in building the plant.

So in 2006 dollars we have the Lepreau project estimated at a cost of $1.19 billion versus the gas project at 436 million.

Now Mr. White on Panel A was eager to distance the massive cost overruns incurred from the construction of Point Lepreau some 19 years ago from the estimated costs and potential for overruns of rebuilding its nuclear reactor and refurbishing the plant for 2006.

In his prefiled evidence, page 7, Mr. White noted that as Lepreau was the first CANDU-6 nuclear unit ever completed, it put NB Power in the unenviable position, and

unintended position of being the forerunner in dealing with design issues and with approvals from the nuclear regulator, which resulted in changes to the scope of the project and delays in its completion with negative consequences for its costs.

Mr. White, in response to cross-examination, said that costs originally doubled or tripled, depending on what the initial estimates used were. And the project completion took three and a half years longer than expected. Partly because they were a forerunner in dealing with design issues and approvals from the nuclear regulator. The scope changed.

Well, will -- could history repeat itself if this project were to go forward? Very possibly. The reconstruction of a CANDU reactor has never been carried out before, according to Mr. White, nor has anyone ever tried to extend the life of a CANDU. So under cross-examination he agreed -- he agreed once again, then, that NB Power would be in the position of being the forerunner in dealing with a nuclear power plant. This time in terms of life extension and with the related approvals from the nuclear regulator for such a project. And that's in the May 28th transcripts, page 255.

Now Mr. White in his evidence tried to minimize the

consequence of this fact. First he said that the work involved is of similar scope to building Point Lepreau, just smaller in magnitude. Intimating that essentially this kind of work has been done at Lepreau.

However under cross-examination Mr. White acknowledged the scope of the work is quite different than that involved in the original construction. As was explained to us during the hearings, to rebuild the nuclear reactor and dealing with the 20 foot long, 380 radioactive pressure tubes and Calandria tubes, very different. Using newly designed equipment, or newly modified equipment with new designs that hasn't been used before for this purpose to withdraw tubes and reinsert tubes and reconnect them with the spaghetti forest of new feeder tubes.

We saw the video. What are the chances of this process taking significantly longer than expected? Well, we can't really know because it has not been attempted before.

But when I asked Mr. Eagles about how long for the retubing part of the project, he was unsure exactly how long it would take under -- under questioning. You will see that on page 289 on the May 28th transcripts. But he indicated that he thought the schedule, whatever it was, was achievable.

According to Mr. Groom, the entire experience with Calandria tube removal amounts to six tubes removed from four CANDU reactors beginning back in the 60s.

Mr. White assured us that retubing would come in on schedule because of the faith he had in AECL's experience with this kind of work. Well, in addition to these six tubes, let's look at the only other relevant experience that we seem to have.

Pickering units number 3 and 4 were down for 26 months and 18 months respectively to simply replace the pressure tubes alone. This following two years of planning. And this was after they had the experience of already replacing the pressure tubes in their units 1 and 2 at Pickering A.

Now here NB Power is proposing to have AECL also replace Calandria tubes, feeders and refurbish other areas of the plant in 18 months or less.

According to the Board minutes of December the 18th 2001, a three month delay would result in an additional cost of $69 million, or expressed in the net present value form for 2002, $46 million. So using that $46 million, that's for three months, if the project took 50 percent longer than anticipated, you are looking at roughly an increased cost of $150 million in net present value as a

result of project delays alone.

Now as for the cost of the work itself, Mr. White indicated in his evidence that the scope of the project is well understood and confirmed by the nuclear regulator. But nothing could be further from the truth. The full scope of -- the full scope of the project will not be confirmed until the pressure tubes and Calandria tubes have actually been removed, and the interior of the nuclear reactors Calandria can be inspected. And until the nuclear regulator has actually ruled on the project.

In fact, NB Power has identified a number of unknowns concerning the technical scope of the project and the potential requirements of the regulator. These have been broken out into the 24 licencing technical and project management concerns originally provided in Board minutes to CCNB-102, whose costs at a maximum in exhibit A-23 are listed as being $600 million in total, if they were at maximum.

Mr. White did agree in cross-examination that with respect to the eight technical risks identified, that the scope of the project indeed could increase if inspections between now and 2006 revealed problems.

According to exhibit A-23, the maximum cost of resolving the unmitigated technical risks so far would be

382 million. What is the probability of the scope and costs of the project substantially increasing with regard to these technical risks currently unmitigated? It's impossible to tell.

The evaluation of these risks has largely been done by applying the engineering judgment of NB Power's staff with the input from AECL for a project that has never done -- been done before.

Until now, no one has assessed a CANDU nuclear power plant at the end of its life to determine what work is required to resurrect it for an additional 25 years. In a sense, the Lepreau plant is a guinea pig here.

For the four technical risks that Mr. White, however, referred to as show stoppers in cross-examination, Panel A did attempt to rank them in response to a question from Mr. Gillis, from most likely to least likely. And he ranked them as the most likely of these, moderator, that is in a comparative sense. He argued they were all low probability.

But in a comparative sense the most likely was, number 1, moderator recovery system would be required at a cost of $15 million.

After that number 2 was problems with the remaining life of the existing pressure tubes at a maximum cost of

100 million. The next one was another one at a maximum cost of 100 million which was the environmental qualification of all PVC cables. And then finally, problems resulting from reactor assembly component inspection, maximum 60 million.

Interestingly enough though, Panel A in response to Mr. Gillis, did indicate that the most likely changes to the planned scope of the project would be required -- would be those required by the Canadian Nuclear Safety Commission themselves.

In total, according to NB Power's assessment of the ten most likely licencing risks, the maximum cost there in terms of changes to scope of the project from changes that might be required by the regulator would be $181 million.

And Panel A indicated at least some of these are likely to be required by CNSC. However, in thinking about this, and in thinking about the evidence with response -- with respect to these technical and licencing risks, it seems to us that the greatest unknown really is whether the Canadian Nuclear Safety Commission will actually require a reconstructed and life extended Point Lepreau to be relicenced rather than simply renew its licence. And in doing so to meet modern nuclear safety standards for new nuclear plants. This is the situation for the four

units at Pickering A in Ontario, which have not undergone the kind of kind of work that is being proposed for Point Lepreau, but have undergone various levels of refurbishment.

Under cross-examination Mr. White made it clear that he wishes to avoid this risk, that's of relicencing, at all costs. As part of this effort NB Power has looked at how Point Lepreau deviates from current nuclear safety standards, and has undertaken to provide a rationale to the regulator for why that's okay. And including on a number of points doing benefit cost analysis which they hope the regulator would accept.

In fact, while Mr. White is characterizing 2006 as the end of Point Lepreau's life for the purpose of the Public Utilities Board here in New Brunswick, he is characterizing this period as a planned maintenance outage for the purposes of the regulator to avoid having to relicence the plant.

Further, Panel A explained their licencing renewal strategy to avoid having their licence come up for renewal, if when the plant is down if it's to be refurbished, is to ask for a three year renewal this year instead of two years. That would put them on a schedule to sale through refurbishment if it went ahead without

having to renew their licence in midstream.

How will the Canadian Nuclear Safety Commission address Point Lepreau's shortcomings, it's status as a planned maintenance outage versus its status as the end of its life awaiting salvage and its operation thereafter, is a big unknown.

NB Power has attached far too much significance to the so called comfort letter solicited from the staff at the Canadian Nuclear Safety Commission.

Mr. White in his evidence, page 8 of A-1, even went so far as to incorrectly state that the scope of the work has been confirmed by the nuclear regulator.

The Commission has a -- the Canadian Nuclear Safety Commission, as he later explained under cross-examination, have yet to consider the scope of the work that would be required in refurbishing Lepreau. And even the staff indicated they do not agree with a number of proposals concerning the scope of the project made to it by NB Power in the licencing framework document attached to the comfort letter in A-1.

In fact, in response to NB Power's proposed licencing framework, Mr. Hawley of the -- formerly of the Reactor Evaluation Division of the regulator, wrote Mr. White on December 14th 2001. And he explicitly said and I quote,

"NB Power should be aware of the limitations of CNSC staff authority in this regard. For example, CNSC staff cannot bind the Commission in the decisions it may make today or in the future. Nor can present day staff bind tomorrows' staff on recommendations it may make to the Commission. And notably, CNSC staff is also limited in what it can say at this time by the relative immaturity of the project assessment work and CNSC staff review."

So to suggest that this letter from the CNSC staff concerns -- confirms the scope of the work by the nuclear regulator is at best misleading.

As Mr. White pointed out during cross-examination with respect to CNSC licencing, NB Power would be ploughing new ground with its proposal to life extend Point Lepreau with the regulator.

Given the public nature of the CNSC licencing process, and its relicencing of the Pickering A nuclear plants following refurbishments that were designed, as Mr. White had said, only to get the full operating life out of them, not to life extend them, CNSC may very well indeed require a new licence for a reconstructed Point Lepreau, which could substantially change the scope of the work and hence its cost.

Given that no one has ever rebuilt a CANDU reactor

before, the condition of numerous components remain unknown at this time. And that this would be the first time the nuclear regulator has had to deal with such a project. There is much uncertainty about the cost and much that is unknown.

Whereas the original construction costs of Point Lepreau as much as tripled from the conception to completion, and as with that project this one too, in Mr. White's words would be a forerunner in dealing with the actual work on the ground and the necessary regulatory approvals, it is conceivable that we could easily see a 50 percent increase in the reconstruction costs. But as no one has attempted to salvage a CANDU nuclear reactor before, the real potential for cost increases is unknown.

If this were to be refurbished, what are the chances of the reconstructed Point Lepreau actually operating for 25 years, that was the -- which was the life span used for basis of comparison to look at the economic case for carrying the project forward 25 years so that we actually get full value out of it.

As we know, Point Lepreau is only 19 years old now. It was supposed to last for 30 years. It may make -- make it to age 23, if all goes well between now and 2006. NB Power has already had to write off $450 million in

consideration of its earlier position that the plants would -- would run until 2008 instead of the original planned 2013.

Under cross-examination Mr. Pilkington indicated that the ageing mechanism, such as the lengthening of the tubes, which they call axial creep, and sagging of pressure tubes, are what have shortened the engineered operating life of Point Lepreau.

He also indicated that both of these ageing mechanisms would be operative in a reconstructed nuclear reactor at Point Lepreau. Which is presumably why they are planning for 25 years now, not 30. However, at age 19 NB Power staff seemed concerned that there is a risk that Lepreau today might not even make it to its 20s. It is there among its 25 risks.

To insert new pipes into a 23 year old Calandria vessel with its various internal components, nozzles and control rods and expect it to run trouble free for a total of 48 years -- that is the Calandria vessel and its associated bits -- seems unreasonable. Yet that's what they are projecting.

Once again we are dealing with an unknown. Since this has not been attempted before, we just can't know how long the reactor would operate reliably. We may get 23 years

out of the 30 years the first time around if we are lucky. To suggest that we will get 25 years from a salvage job would not appear to us to be very prudent.

Now what are the chances of a reconstructed Point Lepreau actually operating at the 89 percent capacity factor, which NB Power is saying they are going to be able to run it at for its entire 25 year projected life.

According to the evidence, Point Lepreau's performance began to dramatically decline in 1995 when the reactor was only 12. Less than half its engineering life. Since that time it has run at a capacity factor of under 70 percent. Panel A is projecting a lifetime capacity factor over 25 years for a refurbished Lepreau to be 89 percent.

And when we asked to what they owe their optimism, Panel A repeatedly answered that, well, if you ignore the problems that happened at Point Lepreau the first time around, it would have achieved such a high capacity factor. They claim that these problems will be corrected if they are permitted rebuild and refurbish Point Lepreau.

Now Mr. Pilkington under cross-examination on May 28th clearly stated quote, "That our loss of production has been due to movement of garter springs between the pressure tubes and Calandria tubes. He later clarified that position in saying that while the majority of the

loss of the performance at Point Lepreau can be attributed to the garter spring problem there. And he went on to say that this problem will be rectified with the use of tight fit garter springs in the refurbished Lepreau.

Mr. Groom pointed out that they have had a little experience with the tight fit garter springs, with one pressure tube now having been installed for 13 years with such a tight fit garter spring. And they are convinced that based on this performance that it will be licked -- the problem will be licked.

If we assume for now that this 13 years of experience with that tight fitting garter spring is representative of what will happen over 25, we need to ask how much of Point Lepreau's performance problems were actually caused by the movement of garter springs.

In an undertaking provided by Mr. Pilkington he directed us to exhibit A-6, PNB 2 which described the various reasons for performance problems at Point Lepreau, for the significant reductions in capacity factor since 1995. And in total this evidence listed it over 750 days of outages that contributed to declining performance.

Now as the result of an undertaking, Mr. Pilkington calculated that only 260 days of outages were attributed to dealing with garter spring problems which he brought

back to us on May 29th.

As he said, that meant that the garter spring problem actually did not represent the majority of the problems as he had previously indicated. In fact it represented only one-third of the performance problems at Point Lepreau since 1995. He didn't say one-third. The 260 days of outages is approximately one-third of the total number of outages listed in PNB 2.

Under cross-examination he described human error, other equipment problems and a lightning strike as causing the other performance problems.

So here we have two-thirds, the majority of the problems causing problems with Point Lepreau's performance, under 70 percent since 1995 have been caused by other things than garter springs.

NB Power provided no evidence as to how these performance-related problems in a reconstructed Point Lepreau would be avoided, save for upping the chromium content in the feeders in hopes that this would slow corrosion.

Human error will continue. Equipment will fail. And corrosion will remain a reality. Here we have experience to draw on, yet their predicted capacity factor out to 25 years assumes 89 percent trouble-free.

There is no justification then for assuming that an 89 percent capacity factor could be achieved. And apparently AECL agrees with them, as its Performance Agreement with NB Power would only guarantee performance of a reconstructed reactor at 80 percent. And even then their guarantees are capped at 25 million per year to a maximum of 225 million.

Nor can we ignore the direct experience with the four reactors of Pickering-A which achieved capacity factors of between 62 and 65 percent over their operating life following retubing. And that is in exhibit A, CCNB 26.

According to NB Power's own modelling with PROVIEW, the capacity factor which the supposed cost advantage they estimate over gas for a refurbished Lepreau would disappear at 74 percent capacity factor -- lifetime capacity factor of 74 percent.

Well, that gets us then into the direct -- the evidence around the direct comparison between salvaging Lepreau versus building a new natural gas plant.

Despite the tremendous number of unknowns surrounding the costs of attempting to rebuild the nuclear reactor and salvage the power plant at Point Lepreau, despite the unknowns around how long the salvaged power plant might operate, despite the unknowns about how well it will

perform, NB Power maintains it would be more cost-effective than building a new natural gas fired power plant.

Now the 400 megawatt combined cycle natural gas fired power plant is the option which NB Power itself determined from its screening analysis was a viable option. NB Power itself provided extensive evidence on the costs of carrying out and building and operating a 400 megawatt natural gas plant.

It provided no evidence or concerns in its evidence about -- prefiled evidence, about problems with natural gas supply. It made comments here and there along the way, intimating this was a concern. But there was no evidence documenting this. So those comments could only be considered to be speculative.

NB Power's analysis between these two options relies heavily of course on the fact that it will operate for 25 years at 89 percent capacity factor, but also -- and if the costs stay where they say they will be -- but also relies heavily on an assumed carbon dioxide credit of $15 a tonne for Point Lepreau.

We find this throughout their analyses to the point where we had to ask a series of interrogatories to ask them to remove it so we could look at their analyses

without it in a number of their sensitivity and stress cases.

And in fact in their stress case, when we asked them to remove it, the advantage to their stress case -- or the results of the stress case flips so that natural gas was hundreds of millions of dollars, using their approach, better than the Lepreau option.

Anyways, under cross-examination Mr. Marshall admitted there is no legislation providing for such CO2 credits. He admitted that the federal options paper for climate action, which is currently out for public consultation, contains no potential for the C02 credits in two of the four options under consideration.

And of course he disagreed with the section of the Board's consultant's report, An Evaluation of NB Power's Screening of Demand Side Management Options, which addressed NB Power's assumptions by saying it would be speculative to include CO2 credits in the analysis.

So in the absence of legislation providing for CO2 credits and in view of the fact that fully half of the options under consideration by our federal government for their climate action plan do not provide for CO2 credits whatsoever, and given the opinion of the PUB's consultant on this matter, we ask that the Board consider the use of

CO2 credits in the NB Power analysis as speculative and should be discounted.

Now under cross-examination Mr. Marshall agreed with me that the costs of refurbishing Point Lepreau are higher than building a new 400 megawatt gas plant. And we can see this when we look at either the spreadsheet used to sort of explain the inputs to PROVIEW for us, the base case gas in appendix B2 of the prefiled evidence.

Or we can see this also in the input information into how they generated the cents per kilowatt hour comparisons between the Lepreau option and gas in their response to CCNB supplemental 18.

He also indicated -- and in fact from these, using the net present value dollars in appendix B-2 from the spreadsheet, the base case gas, the capital costs of rebuilding Point Lepreau are indicated as being 68 percent higher if all goes as planned and 135 percent higher when you factor in the costs of replacement power needed during refurbishment, if there are no construction delays.

So 68 percent higher on the capital costs alone, 135 percent higher in total, when you consider replacement power costs higher than the gas project cost. And that is in net present value dollars from their spreadsheet in B-2, appendix B-2.

Now under cross-examination Mr. Marshall also agreed that the costs of operating a refurbished Point Lepreau, not including any provisions for the cost of replacement power required during planned or unplanned outages, because that wasn't considered in the comparison, the costs of operating a refurbished Point Lepreau in fact would be more costly than operating the gas plant.

And in fact you can again look at either of those two things, the inputs into their cents per kilowatt hour calculations in CCNB supplemental 18, or the base case gas spreadsheet in appendix B-2 and look down the columns for operating costs, for ongoing capital costs, for O&M costs and for fuel costs, the things that go into operating the power plants, and you look at it in terms of the net present value in 2001 dollars, the operating costs of Point Lepreau would be 63 percent more costly than operating the natural gas plant. So capital costs are higher, operating costs are higher for the refurbishment option than the gas option.

Finally, Mr. Marshall agreed with me under cross-examination that a refurbished Point Lepreau would generate additional radioactive wastes over 25 years that in fact would incur management costs which a gas plant would not, real costs that Mr. Groom in his evidence, in

appendix A-6 on page 1, clearly indicated incrementally would cost an additional $414 million constant 2001 dollars. That is not net present value. But those were the way he provided the figures on page 1 for the way he did the analysis.

So those are the numbers that we have got. And we can't add them directly into the other numbers. So we have to kind of add them on as an appendix, I guess. So 414 million in 2001 there.

So the question then is how could a salvaged nuclear power plant whose project costs would be at least 135 percent higher than those of a new gas plant, whose operating costs would be at least 63 percent higher than a new gas plant and which would carry an additional cost of 414 million albeit in 2001 constant dollars to handle the resulting radioactive waste, which a gas plant does not produce, be the least cost option?

Well, the point I guess is that Point Lepreau provides 635 megawatts of capacity to New Brunswick while the gas option model provides 400 megawatts. So could the Lepreau refurbishment option be more cost effective on a kilowatt basis of installed capacity?

In exhibit A-13, in response to CCNB supplemental 18, NB Power provides the data used to calculate the cents per

kilowatt hour comparison that was used in the table 3-5 of the Integrated Resource Plan.

And on page 25 of that CCNB supplemental 18, NB Power says the comparative costs on a kilowatt basis of installed capacity -- so per kilowatt installed -- net present value 2006 dollars is $4,040 per kilowatt installed for Lepreau refurbishment including replacement power and $4,043 per kilowatt for the new combined cycle gas plant.

In other words, using NB Power's methodology and the figures which they provided in response to the supplementary, we find that the cost of the two options on a kilowatt of installed capacity basis is comparable.

In fact in CCNB 63 we asked why NB Power didn't compare a gas plant of similar size to Point Lepreau in its analysis? Mr. Marshall responded that the capacity deficit without Lepreau could be sufficiently met by a 400 megawatt gas unit and at a lower net present value cost than a 600 megawatt gas unit.

So they modeled the 400 megawatt unit against the 635 Lepreau refurbishment, because he said it was adequate to meet the capacity deficit, which is what we are looking at here. And it was cheaper than doing the 600 megawatt unit in terms of net present value cost.

So according to NB Power the gas option is cheaper to build, cheaper to operate, produces no radioactive wastes with their attendant costs, which we have evidence on, costs the same or at least comparable on an installed kilowatt of capacity basis, lacks the unknowns associated with trying to salvage Point Lepreau and is sufficient to meet the capacity deficit without Lepreau.

Still then how is it that NB Power insists if all went according to plan there would be a net present value advantage for the Lepreau refurbishment of $234 million over the 30 years of their analysis? That is their net present value, 2001 dollars.

And that has been bothering us. And when you look at it in appendix B-2, which is kind of what they provided to be able to try and understand what went on in PROVIEW, I guess, and the spreadsheet here, when you look at that, under the combined cycle gas power side of the columns, they have required for comparison purposes the gas option to purchase a considerable amount of replacement energy on top of the power that it generates, which Mr. Marshall actually said should be called additional energy, not replacement energy.

So the gas plant is expected -- the 400 megawatt gas plant, according to the evidence, is expected to produce

almost 2,600 gigawatt hours every year for at least 25 years. At least that is what they used in their spreadsheet in appendix B-2. So 2,600 gigawatts every year for at least 25 years.

For 12 of those years, NB Power for the comparative purposes, forces additional energy to be purchased in amounts that exceed what the gas plant itself generates. For 12 years they are asking you to buy more energy than it produces itself.

Now Mr. Marshall was asked to express the 300 megawatt shortfall in capacity for 2006 in energy terms. He indicated this would be, if you assume 100 percent capacity, 2,600 gigawatt hours.

Now if we look at the base case spreadsheet back in appendix B-2 of exhibit A-1, we see that in the first year without Point Lepreau the gas plant at 72 percent capacity generates basically 2,600 gigawatt hours, but then is forced that year, the first year, to purchase a further 2,100 gigawatt hours for a total of 4,700 gigawatt hours when the gap is something less than 2,600.

Mr. Marshall -- that's because at least 2,600 is assuming 100 percent capacity for 300 megawatts. Mr. Marshall has argued that despite the 300 megawatt shortfall you still have to provide over 600 megawatts of

base load energy in New Brunswick.

Well, in terms of base load -- and there wasn't a lot of evidence provided on this -- but if you get 400 megawatts of base load from the gas plant then of course that leaves 200 megawatts of base load coming from the system somewhere.

So the proper comparison really would be to compare the cost of 200 megawatts of base load energy from the system against what it would cost to get it from refurbishing Point Lepreau after it has reached the end of its life.

In other words can an existing unit on NB Power's system provide 200 megawatts of base load energy at a cost of less than the 5.01 cents per kilowatt hour that NB Power says it would cost to provide from a refurbished Point Lepreau?

While no direct evidence was supplied, the cost of replacement energy listed in appendix B-2 of exhibit A-1 for when Lepreau would be down for refurbishment is 4.3 cents per kilowatthour, which Mr. Marshall under cross-examination said would be even cheaper when Coleson Cove is burning Orimulsion.

So they are looking at spending 4.3 cents a kilowatt hour when Lepreau is down -- if Lepreau is down for

refurbishment, to provide base load -- if they don't have Lepreau, the cost of providing base load by refurbishing Point Lepreau is 5 cents or more per kilowatt hour.

Further in the evidence filed with the Board in connection with the proposal to refurbish Coleson Cove November 1st of 2001, the levelized life cycle annual cost for converting Coleson Cove was quoted as 4.37 a kilowatt hour, again considerably less than the 5.01 cents for refurbishing Point Lepreau.

Further, that evidence indicated that in the absence of Point Lepreau, Coleson Cove could operate at a higher capacity factor, enhancing the economics of its high capital costs.

So we have established in evidence that the cost of building and operating the gas plant is less than the refurbishment options. The cost per kilowatt installed is comparable. And the costs of supplying additional base load energy from NB Power's existing system, at 4.3 cents per kilowatt hour right now or from a refurbished Coleson Cove at 4.37 cents a kilowatt hour is less than providing it from refurbishing Lepreau at 5.01 cents per kilowatt hour.

Mr. Marshall under cross-examination indicated there has been plenty of experience with combined cycle natural

gas plants. He said the financial risk with a gas plant quote, "Is not so much in operating the plant, the risk is in the price of the fuel that goes into the plant." That was on June 10th.

Whereas the risks associated with reconstructing Point Lepreau, as we have seen from the cross-examination of Panel A, are associated with the cost of the project itself, the operating costs other than the fuel. And in the case of gas, the magnitude of the risks surrounding fuel price fluctuations are subject to some reasonable estimation. We have been digging gas out of the ground and from under the sea for a long time in North America, where the magnitude of the risks in the case of refurbishing of Point Lepreau are uncertain and unknowable at this time in a number of instances. And in the base case and in the comparison NB Power has anticipated what it would think would be reasonable risks associated with natural gas pricing and incorporated that into the comparative analysis they did.

So the question is, what should ratepayers and taxpayers be asked to bear, financial risks of volatile fuel prices in the natural gas market or the financial unknowns concerning the cost to construct and operate a refurbished life-extended nuclear power plant, which NB

Power agrees is a more expensive financial commitment than the gas alternative to begin with.

And we also must think about who stands to benefit in the case of a refurbished Point Lepreau. We know for one thing that a whole lot of machinery is going to be created that AECL will own and be able to use for other such projects, and that AECL as the general contractor here, if Point Lepreau goes forward with this, it will the guinea pig and AECL then will be in a position to sell its services to do similar things to other CANDU reactors if their owners decide to go this route in the future.

The bottom line is we know a lot more about gas markets and even about Scotian shelf gas reserves than we do about replacing the Calandria tubes in a 23 year old nuclear reactor and then trying to operate it for an additional 25 years at a very high capacity factor.

In light of the evidence, the most cost effective expenditure that poses the least risk to taxpayers and ratepayers and minimizes exposure for people of New Brunswick clearly is an investment in a new 400 megawatt gas-fired power plant.

So we would request that you recommend against NB Power's request to reconstruct and refurbish Point Lepreau.

Thank you, Mr. Chairman, Commissioners of the Board.

CHAIRMAN: Thank you, Mr. Coon. We will take a five-minute recess and then, Mr. Craik, you can move up to mike number 8, if you would.

(Recess)

CHAIRMAN: Go ahead, Mr. Craik.

MR. CRAIK: Good afternoon, Mr. Chairman. A number of intervenors just recently today have raised concerns about the cost of storing nuclear wastes at the Lepreau site and propose that the burning of natural gas would be a better alternative. I would respectfully point out that one thing about these nuclear wastes is you can go and look at them and they just sit there in a small volume inside a concrete container with some metal lining, and yet the carbon dioxide which the natural gas proponents are advocating we burn goes up into the atmosphere and there is no way in which we can retrieve it.

How to cost this into the equation is another issue, but I would just make the comment that if we are going to get on top of global warming in some way we have got to take commercial and technical risks. This is the only way our society and mankind will survive global warming.

Now one thing which I have raised with many proponents of natural gas is they totally ignore the leakage of

methane all the way from the gas well, in our case in Sable Island out in the sea, through the various processing plants and finally till it gets to the power station. This is totally ignored in the equation. And methane is at least 22 times more potent heavy greenhouse gas than carbon dioxide. So if people want to get into debates about full cycle economics, benefits of natural gas over nuclear, I would simply say they should include that particular component into this equation.

Further to that there has been talk about the reliability of the supply of natural gas, and at one of the hearings under evidence Mr. Marshall informed us that the nearby Bayside Power Station had to be severely down rated for about a week because of difficulties in getting natural gas from Sable Island to Saint John. These difficulties were to do with problems they had at the gas well and fire fighting and also problems at the gas processing plant.

Now if we start building natural gas electrical fired power stations you could postulate a situation where some event occurs which would not only knock out our electricity, but also our heating.

So I wish people who keep advocating the benefits of natural gas would take into account these probabilities

and recognize, as I said earlier that in order to provide a reliable supply of electricity emission free, greenhouse gas free, some commercial and some technical risks are inevitable.

Having said that, I would like to address the three contracts which -- or agreements which have been drafted between NB Power and AECL. And the way I look at these three agreements is that here we have two Crown corporations, one being in New Brunswick and the other being -- based actually in Ontario where AECL have their design offices and research offices.

So the issues I will raise are related to the flow of money between these two Crown corporations.

Now as a taxpayer you may say, well what does it really matter? You are either, you know, pay in your electricity consumption rates to NB Power or you pay in your taxes which eventually come out as a hundred-million-dollar a year subsidy to AECL.

Well as a New Brunswicker I would like to think that in the process of retubing and refurbishing that the maximum amount of the money that is involved in this remains in New Brunswick. We have heard our friends from the International Brotherhood of Electrical Workers making a very good and eloquent case about the fact that one of

the attractions of a nuclear power station is it provides highly skilled jobs. Well I would like to see those highly skilled jobs optimized in this great enterprise in New Brunswick and not to have a disproportionate amount of these highly skilled jobs and the money that goes with them flowing into Ontario. Now this may be perceived as being awfully provincial, but having lived here for the last 20 years I have tended to adopt the place.

So if we look at these three contracts, the first one is about retubing. Now it's true that AECL have never retubed and have placed all the Calandria tubes and all the pressure tubes on a CANDU reactor. And -- but they have seen Ontario Hydro do some of this work certainly, all the pressure tubes at the Pickering units, and they have learned, they have a very capable technical organization, and they have excellent design and laboratory facilities both at Sheridan Park in Mississuaga and also at Chalk River. So technically speaking there is no argument that they are the best organization to undertake the retubing of the Lepreau reactor.

However, when you look at the contract in detail, I have mentioned before in my evidence, I am very troubled with the fact that they are very shy about providing a significant penalty on the possibility of the schedule

extending beyond a shutdown of 18 months. It seems to me, and I have expressed this before, that there should be some justifiable technical risk analysis made of the possibility of this schedule being extended. We have had studies presented to us in confidence about the Ernst & Young probability of having to do all kinds of things very costly to the power station and the probability thereof. But when it comes to just a plain simple item of what is the probability of this schedule being extended we are just told to, you know, have faith and believe in what the people who are planning the retubing believe. There is no third party reference. The only reference that I could find was to that in the famous Hagler Bailly report which said that -- and this was a statement made in that report by a gentleman called Brian Murdock who had been through the management of a retubing of the four Pickering reactors, and his statement was that the maximum possible time required to replace the Calandria tubes and the pressure tubes was equivalent to three months.

Now it would seem to me that using that as a contingency or a penalty against scheduled delay would be the right thing to do and I am totally amazed why NB Power and AECL do not recognize what a bad image they are presenting by not making that particular penalty credible.

In order to make it credible all they have to do is increase the cap from $10 million to $25 million and the $250,000,000 a day, which is half the liquidated damages, would cover that three month period.

Having said that, frankly that is the only thing that disturbs me about this particular retubing contract. And it's just a pity that that little irritating weakness is not removed.

Now when we now address the other contract, which is refurbishment, the situation gets a little bit more murky in that there are so many different items involved. Now what we have been told is that this is all a partnership between New Brunswick Power and AECL.

Now I really have some doubts as to why New Brunswick Power needs such a partnership. They built Lepreau as themselves and employed AECL as a subcontractor and other people and they have operated the plant, as they say, quite successfully for many years now without having to have a partner. And I'm very suspicious as to what this partnership is going to do in terms of the flow of money out of New Brunswick into Ontario.

So looking at the refurbishment agreement there are all kinds of items of work done there, lists of analyses to be made, et cetera, et cetera. Just focusing on what I

would call the hardware items, things that they are proposing to replace, I find that there are about 18 of such items. Half of those items refer to pieces of equipment which AECL have never had the responsibility of designing. And if anybody cares to check the division of responsibility for the engineering of Lepreau, you will find that AECL were not involved in such things as the control room air conditioning, the inverta power supplies, the turbine generators, the raw service water, the recirculating cooling water.

So of these items in the refurbishment agreement we have AECL getting into work that they do not have the technical experience to do.

So no doubt they could handle it, but it would be much more costly. They would either take the work and spend a lot of money travelling up to New Brunswick to find out about it, or would employ younger engineers to learn about it or eventually go and go to a third party expert.

I'm simply saying I don't understand why New Brunswick Power, the Lepreau management, do not deal directly with the best experts that are available for these particular work items, whether they be in New Brunswick or elsewhere. Why they have to do this under some kind of a partnership with AECL, the reason for that just totally alludes me.

Now this partnership is supposed to offer all kind of benefits and that leads me to the third agreement which is the so-called plant performance agreement.

Now setting aside the confusion that was made, what it took them, I don't know, 18 months to eventually decide that the right term was availability and not capacity factor, what do we get for this agreement? If you just take the agreement and look at it and say, here is an agreement. How much does it cost me and what am I buying for it? This is a fairly simply analysis.

Well what I find that I'm buying is there will be meetings of this panel comprising three NB Power engineers and three AECL engineers once every three months, and if you spread that out over 25 years there is going to be 110 such meetings. And if you say, okay, we are buying, and being credible, the professional services of these three AECL engineers over that period of time. Well having been in the consulting engineering business for many years, it didn't take long for me to figure out that that could be worth $3 million. So in that agreement we are purchasing $3 million worth of high quality, hopefully, engineering from people based in Sheridan Park, Mississauga, Ontario. And what are we paying for it? Well we are paying $163 million for the purchase of $3 million worth of

engineering. Now people say, well wait a minute. You are missing something. Well I have been accused of that before many many times. And I only wish that some of the negotiators were so humble as to admit that they might be missing something.

But what they were also buying is a performance, a long term plant performance warranty. And the warranty is $225 million. Well, considering the project is going to be approaching a billion dollars to execute, then that is about a quarter of that amount, which doesn't sound very much. But nevertheless that is what the plant performance warranty is being bought or what it is selling us.

So what's it costing? Well, it's costing $163 million. NB Power are now in the position of paying $163 million for a plant performance warranty worth $225 million. If that was insurance that would be an insurance rate of 75 percent.

Well, I thought, what do I pay for the insurance on my house over 25 years? I have never asked this question before. But last night I got out my insurance policy and said okay, this is how much my house and belongings are insured for and how much I pay every year. And I multiplied it by 25. And what did I find? 4 percent of the value of the property is my total insurance premium

over 25 years. So why would an organization pay a premium of 75 percent to obtain this coverage? It just boggles the imagination.

So here we have these three contracts, as I have said, and what I would sincerely recommend to the gentlemen of the Public Utilities Board is they look at these three contracts or get some experienced contract engineer to look at them in terms of risk, in terms of how much money is going to flow out of this province into Ontario because of the way in which these contracts have been structured.

Thank you, Mr. Chairman.

CHAIRMAN: Thank you, Mr. Craik. Mr. Adams, would you like to come forward?

MR. ADAMS: Thank you, Mr. Chairman. My comments will be brief. The mandate of this tribunal is effectively to stand in the place of taxpayers in evaluating an investment that they are being asked to make as involuntary investors.

And it's my respectful submission that you ought to observe the standards of -- at least the standards of commercial due diligence in evaluating the proposal that is in front of you.

Of course your responsibilities extend beyond simply a commercial due diligence standard, but should extend also

to other public policy priorities of the province.

But taxpayers of New Brunswick are entitled to a standard of scrutiny that you apply to this task that is at least to the standard of commercial due diligence. And it is my submission to you that the information in front of you is deficient when measured against that standard.

NB Power is poised to reproduce the errors that the old Ontario Hydro committed in the 1980's when the Pickering-A station was retubed. That station following its retubing had a troubled operating history, as is documented in the record of this proceeding, and in addition to that found itself in a situation that it required a second major refit. That second refit was not anticipated when the original retubing was undertaken. And looked at in hindsight it is very clear now that Ontario's best economic interest would have been not to have proceeded in the first place with the retubing of Pickering.

But one of the factors that I think distinguishes the record in this proceeding is a distinct lack of curiosity on the part of AECL and NB Power in terms of learning the lessons from that previous experience.

There is, I would suggest to you, very little information in the record of this proceeding that goes in

a serious way to analyze the experience that Ontario suffered through and the consequences of that experience.

I have done my best to bring some of that information to the attention of this tribunal through our evidence, and pointed to the financial write downs that Ontario Hydro was forced to take in 1993. But I want to be clear that the information that I provided is information that is only obtainable from the exterior public record.

NB Power and AECL have, as members of the CANDU owners group and as members of the Canadian nuclear establishment, much better access to information. And yet they have not seen fit to bring that experience really in extensive nature to your attention.

The process that you are involved in here is I think fair to describe as a classic central planning exercise and integrated resource planning exercise of the kind that was fashionable in utility circles in the 1980's and 1990's.

NB Power has brought forward a forecast based case. But it needs to be remarked upon that NB Power is not financially accountable for the consequences of any deficiencies in its forecasts in the way that a private sector firm would be.

So if it was an investor owned utility that came

forward with a number of submissions about forecast, the tribunal would be in a position where it could adopt the proposals of the applicant but allow cost recovery only on the basis of what had been forecast.

That protection for the reputation of the tribunal is not a protection that is available to you, because NB Power's capital is all taxpayer at risk capital.

The -- NB Power's case basically is to say to you, trust us. But I think you need to, in determining whether you are prepared to trust them, look to their record. You need to look at their record of forecasting their net income for example.

Since 1995 NB Power has been singularly unsuccessful in forecasting its net income prospects. Again there is commentary in my evidence pointing to a couple of instances of that.

But you can look at it for yourself. You can go back and look at any of NB Power's business plans from the last seven or eight years and see that the company has almost in every instance overestimated its net income.

NB Power forecasted the plant life of the Lepreau station and based its financial accounts on an expectation of a 31 year old -- 31 year service life, an experience that has of course not come to pass.

NB Power made submissions to you in transcript 10/17 that the corporation has always serviced its own debt. It says -- the quote is "NB Power has an 82 year history of comfortably serving its debt."

Now I will just point out to you that that was -- that statement is not correct. In 1999, some -- the $450 million writedown on the Point Lepreau station was, because of the structure of accounts in New Brunswick, transferred to the province.

Now the two commercial proponents for this project, NB Power and AECL, are both currently at a point in their history where the long term future of these organizations is up in the air.

There are public discussions with regard to the future of both of those organizations asking very profound -- I mean, the corporate existential questions about what the future of these organizations really is.

And when you are evaluating the submissions of these two proponents I think it's merited for you to consider their positions in the light of organizations that are really seeking a reason for their own survival.

The tribunal has heard conflicting evidence on gas availability, on one hand Mr. Marshall's testimony that all the Scotian gas is currently committed and my

submissions that the Deep Panuke find is not fully committed.

The matter can't be resolved in the evidence of this Tribunal. But there is a proceeding that is anticipated now for July before the National Energy Board where there will be submissions that will be on the record of that tribunal. And that record will be available to this Tribunal. Depending on when your decision might be issued you might be able to take advantage of more extensive submissions in another form to make your own evaluations.

Again coming back to this principle that this Tribunal ought to apply at least the standard of commercial due diligence, I think that a board of directors of a company that was anticipating an investment of almost a billion dollars would be taking advantage of that type of information.

I want to make some remarks about the treatment that my evidence received here. And I would suggest to you that in some respects, some of the questioning you saw today was I think unbecoming of a dignified process.

There were repeated questions about whether Energy Probe had any members that happened to be residents of New Brunswick, as if this was a guide to the quality of our submissions to you.

We saw the spectre of Mr. Hashey's fishing trip, trying to identify any seizable assets that Energy Probe might have. And there was a suggestion from Mr. Hashey that it was Energy Probe's purpose in participating in public debates about electricity futures, to simply discredit official parties. These are the kinds of things that I think are unbecoming of a dignified process.

But there was also evidence produced by NB Power that has a similar troubling tone about it. There was a suggestion from a witness at page 1017, Ms. MacFarlane, suggesting that all the data in my evidentiary report comes from a DBRS report and from 1996. That would suggest a shocking misreading of the report.

But we can see from the quality of NB Power's interrogatories to Energy Probe that in fact they were careful readers of the report. NB Power carefully reviewed the report and found an arithmetic error that would take some cautious reading to be able to identify. And I'm pleased to take the correction as well from NB Power.

But for a company that has been a careful student of the report to come forward then and say that the only data in this report is from a stale-dated published report from a previous time, I think is another statement that I

consider unbecoming of a dignified process.

So I will close with some remarks about the alternatives that New Brunswick's power system faces. It seems to me that -- I have suggested that there are three potential alternatives. And I have discussed them only in a very preliminary way in my report.

They are purchases from Quebec, purchases from Labrador or potential further development of cogeneration in New Brunswick's highly industrialized economy.

I think it is fair to say that this is a very profoundly incomplete discussion, that a more comprehensive assessment of the alternatives available to the province would be I think a discussion with much greater scope being required.

The view that Energy Probe has pressed in its previous submissions in New Brunswick and analysis of the province's electricity future has relied heavily on principles of competition.

But just -- we didn't make the occasion of trying to expand the scope of this Tribunal's purview into this large and complicated and also controversial area.

But I would say to you that in the position that you are in, where you are standing in for taxpayers who are asked to be involuntary investors for this extensive

megaproject investment, that before you would be in a position to adopt the submissions of the utility, I think that you would have to have a very solid appreciation for what the alternatives are. And it is my view of the evidence in this proceeding that the information in front of you is deficient in that regard.

So I wish the panel good fortune with its deliberations. The panel finds itself in a situation where it seems to me, if I were in your place, I would be troubled by the conflicting interests that you face.

You are a government-appointed regulatory body overseeing another government owned and controlled business. And that creates some, you know, institutional complications of the kind that I myself, when I was on the IMO board, was acutely aware of.

You have a challenging task ahead. And I encourage your caution and also suggest to you that endorsing NB Power's plans would be a profound -- apply a profound financial risk to the province.

There is an easy way out though for you. And that is a suggestion that has now come from public circles in New Brunswick, that a private sector investor might be found to backstop the Lepreau investment.

It seems to me that that is a way of applying a

commercial test to the question of whether Lepreau is viable or not. And that commercial test is the commercial test that is I think the minimum standard that you ought to apply.

So I would encourage you to consider endorsing the farming out effectively of the Lepreau investment so that taxpayers in New Brunswick are not called upon to be involuntary investors.

Thank you very much.

CHAIRMAN: Thank you, Mr. Adams. You refer to the exigencies of the regulation of a crown corporation which we are all familiar with. Mr. Gillis.

MR. GILLIS: Thank you, Mr. Chairman. I would preface my closing argument with the statement that I have made to both panels, that I am in support of the refurbishment and the retubing of Point Lepreau provided there were sufficient warranties and guarantees. Having seen the contracts, there are not sufficient warranties or guarantees. And for that reason I am against the refurbishment on those contracts.

Your decision has to be based upon the evidence that is before you, both in written form and in oral form. And what I have here is I have 12 points that I would wish to make that refer to that evidence. And I have that

evidence already separated out and I will provide it to you. If you would pass a copy to the Board. It might make it a little easier to follow.

This is a full text of those portions that I am interested in. The index in the front basically is just one word to describe the areas of my concern. Of the 12 the first is the objectivity. And the objectivity here I am referring to is the objectivity of the panel in giving evidence before this Board, in particular Panel A.

And when one examines the page 1, it is the evidence I believe of Mr. Groom. I put the question, "And maybe, Mr. Groom, that if the decision is made not to proceed with the refurbishment of Point Lepreau, how many members of this panel would no -- would be without a job in the longer term?" And I drop down, my question to Mr. Eagles, would he still have his job if the decision is not to proceed? And Mr. White said, " Mr. Eagles would not have his job as he currently has it today as refurbishment director."

And question, "And wouldn't -- we wouldn't need a vice-president of nuclear, would we, Mr. White?" Mr. White, "If we don't have a nuclear plant I would suspect we don't need one, sir." And this is the key. And the question was, "And it was you and Mr. Eagles that went to

the Board of NB Power some time ago with respect to the refurbishment of Point Lepreau. Is that not correct?" Mr. White says, "Yes, I do on a regular basis."

So the first concern I have is the objectivity of the individuals that were advancing the proposal, not only to the Board, but also here.

The second concern I have is on the next page. It deals with the guarantee of the Government of Canada. There seems to be a fair amount of evidence from lawyers trying to suggest that AECL, being a crown corporation, and automatically would cause the principal, the Government of Canada, to stand behind AECL.

If that were so, why would you need so many letters from lawyers. If that were so, since NB Power is a crown corporation, why would it need to borrow on their provincial government's guarantee?

What I suggest to you is that the Government of Canada, as well the Government of New Brunswick, when it finds it expedient, will discontinue services, as they have done with airports and harbours, and whatever else they can offload onto somebody else.

So AECL may in the future no longer have the support of the Government of Canada, whether it be five years, 10 years or 15 years from now. And then where are we?

And my question here, the second page, the second point, "Did anyone, to the best of your knowledge, in this panel or anyone else at NB Power request of AECL that they obtain a guarantee from the Government of Canada saying the Government of Canada would support AECL, particularly in relation to warranties and guarantees to be provided?" And I pushed Mr. White. Mr. White said no. That in itself is telling.

This brings me to the third point that I wish to make. And that is of -- and I have got question mark, legal opinions. That legal opinion from the Government of Canada lawyer is of little value to NB Power. If NB Power had a legal opinion from its own lawyer and it were wrong, you can sue the lawyer for negligence perhaps. That legal opinion, if the Government of Canada lawyer was advised that it is going to be shared with others, then you could sue the Government of Canada, the Department of Justice perhaps on the basis of Hedley Bryne and Heller, but there is no evidence of that.

And my questions here that I have set out on page 3 and 4 indicate that NB Power did not pay for that legal opinion and there is no evidence to the author of that opinion that it was going to be shared with NB Power and NB Power was going to rely upon that opinion to give it a

cause of action against the Government of Canada or the Department of Justice, or the lawyer involved.

If you go to the bottom at page 3, the second to the last question, my question simply was, "Did anyone ever advise you that look, the Federal Government will not provide a written guarantee concerning AECL's obligation in any way, shape or form?" Mr. White, "We didn't get legal advice on that." I have read you the legal advice. Well, I suggest for the amount of money that they are investing in this contract they got no advice.

This brings me to the real concern that I have and it is at page 5, it's consequential damage. Consequential damage, as this Board appreciates, is damage that flows as a result of a breach of a contract, other than direct perhaps damage.

In this case it is replacement power. And at the top of page 5 here, Mr. White says, "Replacement power would be considered under the terms of consequential damage. It is not direct damage under the contract." And the question I put to Mr. White then, quite appropriately, "Did anyone in this panel or anybody else from NB Power make any request of AECL for a clause that it would provide for consequential damage, other than saying there is none?"

Mr. White in the next two lines tries to, I suggest, avoid answering a rather simple question with a yes or a no. And when we get to the bottom of this, and I put it all there, so I am not taking it out of context. I say, "Now, when AECL excluded consequential damage", Mr. White says. I said, "Now, did that not cause you fellows some concern that look, if our contractor that is going to enter into this hard money contract with us won't even agree to cover us with the cost of replacement power if they screw up?"

Mr. White, "As we have said originally in our opening presentation that you won't get those kinds of coverage unless you pay a significant premium for that." And this is the heart of what I was after. And I asked him, And that is what I want to find out. What is the premium to compare apples to apples.

And Mr. White after three years of negotiating these contracts and spending hundreds or thousands of dollars, if you look at their proposal, said, "I don't know, sir." To me that is incompetence. If I own the utility and that individual said that to me, I would fire him.

We go on with the quantification of damages. I want to find out really what are the damages we are looking at. Now, you can say replacement power for the next 25 years,

a maximum amount of damage and I got a present value of two and a half billion. Really, the amount of damages any court would award you is the amount of damages to put you in the same position if the contract were performed. So at page 6 I simply asked Mr. White how long it takes to get a replacement plant put in place. He says four years. Four years, replacement power for four years $200 million.

That is the amount of damage we are looking at, 800 million for that, plus the write-off of the 850 million you are going to pay in the first place, it is $1.6 billion. That is the maximum amount of damage.

Now, at page 6, dealing with the quantification I start to ask of the damages. And here at the middle part they talk of liquidated damages. Mr. White about eight lines up from the bottom says, "It covers for a cost that our company incurs because AECL did not complete the work in accordance with the schedule and the contractual agreements that we have." The question was, "So would liquidated damages be that if it was not to complete say by 2007 and that AECL took an extra three years to do it, that they would have to pay you some liquidated damages. Is that your understanding?"

Mr White says, "That is what the contract says today."

And the question was on quantifying it, "And what is the

extent of the liquidated damages that they have to pay you if they take an extra three years as it did when you built Lepreau in the first place?"

Mr. White comes right up the answer, "Liquidated damages capped at 10 million bucks on the retube contract and five million on the refurb contract." Question, "So 15 million dollars in liquidated damage for that three year period would be nowhere near the consequential damage that you will be looking at at some $600 million. Isn't that right?"

Mr. White jumps right at that one and says, "We both agree on that." Well anybody in their right mind negotiating a contract, knowing the extent of the damages that could fall as result of a breach of the contract in something that has never been done before would have that foremost in their mind. And it goes back to the first question I asked with respect to the objectivity of the authors of these contracts.

At page 6 -- or page 8, we get into the warranties. Now I can get a 15 year warranty on a air frame of a Boeing 747. I can get a five year warranty on my toaster. And how much do we get here from the lawyers that drafted these contracts for NB Power? My question is real simple, so what generally with respect to the warranty, what is

the warranty provision under the retube agreement. They fix that. If they don't fix it you charge them back what it cost you.

Mr. White, The warranty provision is for two years on materials and workmanship. And up to 10 years in design." If an engineer or an architect screws up on the design it is 20 years. When our contracts under seal in this province and in the rest of this country and I can give you the cases in the Supreme Court of Canada. And with respect to two years on materials and workmanship, look, an oral contract is a six year limitation period.

It is inconceivable that these intelligent individuals in so ably negotiating this contract have negotiated it down less than my toaster. But that is what they have done. And again it gets back to why. What is the objectivity of the authors of these contracts?

Well, they come up and they say we are going to cover our back side. And this gets into page 9. We are going to cover our back side here by getting a performance guarantee from AECL. There is nothing wrong with getting that performance guarantee. But you want to get it from somebody that has a track record or some experience. And what I quoted here is the evidence again of Mr. White, about a third of the way down. "I see", I state, "But you

agree with me they have no experience on the performance of a nuclear station on a commercial basis?"

Mr. White, "They don't have any license to my knowledge to operate commercial facilities." And I left something out because there was a bunch of extraneous comments. And I go back to him, "Now, if for some reason the plant was never put into service, the plant performance agreement never kicks in. Is that right?"

Answers Mr. White, "That is correct."

So if they turn the switch and it don't work, that plant performance agreement is worthless. And I try to find out what are we going to get back if they turn the switch, and this is the worst of all nightmares, and it don't work. And the question is, If the plant is never put in service because of a design defect, the payments that you get for your guarantees and warranties would all come under the refurbishment and retube agreement because the plant performance doesn't kick in. And Mr. White says we have two year warranty to address that issue. Yes. Well hopefully they will do something within two years.

The question I had -- and the total dollar payment for that would be what Mr. White? 50 grand or the value of the contract. Question: Not 50 percent. He corrects that. It is 50 percent. It's $187 million. I think he

corrected it in a supplemental day.

So then I get into the real concern here I have. We have got the lack of experience in running a commercial utility by AECL is the risk assessment. Well what could go wrong? Now risk assessment is something insurance companies do. I have actuaries that make calculations for me on different matters that I have. I have other professionals make assessments and make calculations. I have mathematicians that I employ in the litigation side to get an understanding of probabilities of something happening.

So I assumed coming into this, the secret document that we had and we got into, was some detailed analysis of risk.

And I was shocked with what the last witness from AECL said, basically that most of the work was done by Mr. Eagles. Because I knew when I questioned Dr. Kugler what Mr. Eagles had said. And it's at page 10. And I asked Mr. Eagles, and it is no disrespect to Mr. Eagles. What is your education? Mechanical engineer. And he said he had a Bachelor's degree in that field. And I go down and it's about five lines. Bachelor's degree. Now probabilities. And this deals with the probabilities of a lot of these 24 things happening.

I said, now probabilities, that deals with statistics and it's a mathematical science. And I'm really interested in how many courses of probabilities did you take in statistics? Just one? Mr. Eagles, I don't recall. Probably one or two. Question: One or two. And that would have been how many years ago? Mr. Eagles: I graduated in 1983. Question: So that would have been back in the late 70s, early 80s, you would have taken a probability course or a course in statistics in which probabilities were covered? Answer: -- or Mr. Eagles: That's correct.

Now when you gave an opinion to the Board of NB Power you wrote or you talked of low probabilities, high cost events. I have got the costs. Now I'm dealing here with probabilities. What statistical analysis did you perform? By what mechanism did you arrive at that? Mr. Eagles: This was the engineering judgment of a number of people on our project team at AECL as to the likelihood that each of these events might occur. And that's not what AECL said.

And I go over to the next page and I will pick it up at about the third line down. Question: So what you did, to put it in a nutshell, is you, the engineers of Point Lepreau, got together with the engineers at AECL and gave some information to some accountants to come up with a

probability of something happening. Is that what you are telling me? Mr. Eagles: Well we discussed the likelihood that any particular event might occur and tried to use our judgment in determining what that would be.

And then I got into statistics again. The fellows at NB Power you were providing this information, the likelihood of something happening which gets into the statistics, they all have masters or doctorates from some of these recognized universities, don't they? Mr. Eagles: I don't believe so. That they have all written books or chapters in books, haven't they, with respect to the topic? Mr. Eagles: I don't believe so. Have they even published any scientific peer reviewed papers? Mr. Eagles: I'm not aware of any.

And then I go on. And I'm rather surprised at how they came up with this so-called document, which doesn't really carry much weight in the real world, I suggest. The last question. And the two of you, NB Power and you fellows that worked at Lepreau, and AECL who hope to get this hard money contract, then went off to see some accountant somewhere and said, look, this is the chance of this happening, prepare us a report, and that that's the secret report we had last week, is that right? Mr. White jumps in. Oh the due diligence process after identifying

potential risks from an engineering point of view, then said, okay, how do we go through a risk analysis and the contingency allowance model so that we could come up with some appropriate value to put on the contingency allowance of this project, to me is nothing but a lot of double talk. The bottom line is they did a very low level statistical analysis with respect to these events happening from people that really didn't have any experience in the field. Or very little. They knew how to operate a plant, but they had never had any experience with respect to putting one together.

So this brings me, after the risk assessment, what is the real risk here to NB Power? And at page 13 I set it out. So -- the question was: So the total in my worst case scenario you have negotiated so successfully is that you will get back about 185 million from AECL, but you will have to spend 1.6 billion. That's an acceptable level of risk, is it? Mr. White: Well, again, it is not the intent of those kind of damages to cover the total replacement cost of power. Question: Well who will cover the cost then under my scenario? Mr. White: That's part of what NB Power takes at its own risk.

Now that's when you look at NB Power. How deep is their pocket, as I put to Dr. Kugler.

And my next set of questions here comes from a later transcript of Ms. MacFarlane. And I will pick it up about three/quarters of the way down. I say, worst case scenario, AECL finishes, leaves the site, you turn the switch on, the plant doesn't work. Worst case is about a billion-six is down the drain until you get a replacement plant. Now AECL's obligation is for only 200 million or 187 million. Who would have to pay back the $1.4 billion? N.B. Power?

And I go over and I can read you the next part, but it's the bottom of page 14. Question: All right. So if it's a cost of NB Power, where does NB Power get the money to pay it back? Ms. MacFarlane: NB Power earns revenues through the sale of power and recovers its cost from its customers it sells power to.

Well I was pushing her, but the bottom line is it's going to come back out of the taxpayers pocket, and the next part will demonstrate how the taxpayer is going to pay this money.

So if you go to page 15, and I'm virtually finished here, it's the risk to NB Power and NB Power's ability to borrow. At this point my questioning of Ms. MacFarlane was to try and get an understanding of how they worked out their scenario. And the first part of the passage, third

line down for Ms. MacFarlane, with respect to answering a hypothetical question if there is no provincial government guarantee, she said they used -- Nova Scotia Power's borrowing discount rate, or we calculated Nova Scotia Power's discount rate, as a proxy for that. In the sensitivity analysis Lepreau was still going to be the least cost option, even using a private borrowing rate.

That was misleading in her evidence. And I pick her up there with the next question and I said, would you agree with me that NB Power is debt financed? And she agrees, yes. And my question was, to the tune of some 99.7 percent -- and I had that from the Dunn & Bradstreet -- or the Dominion Bond Rating Service Report, and this is where I got surprised. She said -- and I do admit I was surprised here -- I believe it is actually greater than that in the last financial statement. My question: And what is it now? Ms. MacFarlane said: I don't have the number with me, but it's approximately 104 percent. And that floored me.

And I was still dealing with a hypothetical here, saying, well if the province is not going to put up a provincial government guarantee and you got 104 percent debt, and you are going to go out and get more financing -- I was trying to find out what the appropriate rate of

interest would be. And the first part of page 16 is interesting because this is what surprised me. She comes along here and says, well look, if we don't get the provincial government guarantee and we are separated into separate corporations NB Power has to let us loose in the real world, cut the umbilical cord so to speak, by making sure we have a proper debt to equity ratio and the province will inject 1 billion dollars into NB Power. That's the first I heard of that one. But that's what she is saying.

And the second half of this page I come back to her again, trying to find out well if you have to go out and borrow and really Nova Scotia Power is 65/35 and you had to go out and borrow and you didn't have a provincial government guarantee and you didn't have this money that you are suggesting the government will give you, what is the rate you would use. And she never does give me a rate. Because if you go to page 17 her answer is quite telling. I cannot tell you the exact rate of interest. And that's the truth. I can tell you it would be classified as junk bond status. And that's the truth as well. From the lips of the accountant of NB Power, and they want to take us further in debt.

Well then the last two points that I have, I describe

it as a moving target. Moving target I think is the best way to describe NB Power's accounting practices.

My question here was that on her figures the projected revenue this forthcoming year revenue of about 1,173,000,000 NB Power is only going to make 2 million after she made that correction, because she had assumed refurbishment was going ahead, but she backs it out, they make 2 million she said. And the latter part of this passage -- well I will pick it up really the last question on this page 18. Question: Well what you are telling us is that you and the other accountants do at NB Power is that you change the rules, you change the figures, and when I pin you down and come up with a $2 million net income next year, you are going to change the rules again and come up with a different figure, is that what you are telling me? Mr. Gillis, there may well be other -- if the refurbishment decision is not approved there may be other things we have to proceed that may cost money, such as that the implications on our financial statements may be more than just not changing the depreciable life. That's all I'm trying to tell you. In other words, if you go back in the history of NB Power it's creative accounting. And at one point, and most of the Board, although I do believe that the Chairman appreciates, they even had to go

to Cabinet to get an Order-in-Council passed with respect to approval of their accounting practices before the accountants would sign the statements back in the mid 90s.

Now that's what they are proposing to do here.

Now the final point that I have, it should be rather telling when AECL's vice-president won't accept the risk of consequential loss.

I go to page 20 at the bottom. Question: And you are suggesting that NB Power is in a better position to take the risk, the worst case scenario that I have painted it than AECL? Dr. Kugler: NB Power as the utility has a certain mandate. And by definition to provide electricity to the province is undertaking those risks. Page 21, Question: And how deep is NB Power's pockets to afford those risks? And he asks, how would you characterize the pockets? And that's when I got into gambling. And if you go down, I asked in the middle of this page, I say, do you -- have you ever gambled, Doctor? Dr. Kugler: In slot machines, yes. And the money that you put in slot machines, is it disposable income that wouldn't affect your lifestyle? Dr. Kugler: Yes. And if it came to the point that your gambling reached the level that you took and you mortgaged your house and you put all that money in the slot machine, that would be a mistake, wouldn't it?

Dr. Kugler: In my case, yes.

And so now to the depth of the pockets of NB Power, the last question I have: But who ultimately picks up this tab for this gamble? Dr. Kugler: I don't -- I wouldn't characterize it as gambling. I see. But AECL certainly wouldn't take the risk? Dr. Kugler: Not for consequential damages of the type that you suggest.

And that's the risk NB Power is asking you to put upon the backs of the taxpayers of this province. That is an entirely unacceptable risk. It's an inappropriate risk and for anybody to suggest otherwise I think would be either singing the company song or purposely or intentionally ignoring the true economic reality. It's a risk that this utility cannot afford.

Thank you.

CHAIRMAN: Thank you, Mr. Gillis. I just want to canvass the intervenors and see if they can give my an approximation of how long they think their summation would take.

Mr. Mosher, are you going to be summing up for JD Irving?

MR. MOSHER: I'm going to be, I think, about ten minutes.

CHAIRMAN: Okay. Mr. Hyslop?

MR. HYSLOP: Yes, Mr. Chairman, I would estimate in the area

of half an hour at the most, maybe 25 minutes to half an hour.

CHAIRMAN: Saint John Energy?

MR. YOUNG: Yes, Mr. Chairman, I will be about 15 minutes.

CHAIRMAN: Yes. We are going to take a five minute recess right now and make a decision about that.

(Recess)

CHAIRMAN: I apologize for taking so long. The Board is going to adjourn over until tomorrow morning at 9:30. Our intention would be complete the summation then, probably break until after lunch and then come back for the rebuttal.

I know that estimations of time of presentations are made in the best faith, but sometimes they go askew.

The Board Secretary has a tentative schedule on the transmission tariff hearing that we will be having in November, December, January. And if anybody is interested in seeing it. And then they can give us an indication tomorrow if something is a glaring conflict that they see in there if they intend to be intervenors, et cetera.

So we will rise until 9:30 tomorrow morning.

(Adjourned)

Certified to be a true transcript of the proceedings of this hearing as recorded by me, to the best of my ability.
Reporter