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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 5th 2002, 9:30 a.m.

Henneberry Reporting Service

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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. Before we begin, are there any preliminary matters? Mr. Hashey?

MR. HASHEY: Yes, Mr. Chairman. A preliminary matter arising out of yesterday. A request was made that we -- or we agreed that the Dominion Bond Service report should go in evidence.

CHAIRMAN: Yes.

MR. HASHEY: I have one copy to be marked and I have 15 copies for the Board that I will give to the Secretary.

CHAIRMAN: Nobody has any objections to that being entered. It will be A-21. Any other matters, Mr. Hashey?

MR. HASHEY: No, Mr. Chairman.

CHAIRMAN: Any other intervenors, any matters? All right. Mr. MacNutt.

CROSS-EXAMINATION BY MR. MACNUTT:

Q. - I guess, Mr. Eagles or Mr. White, this question would be directed to you. If my understanding is correct, the contingency amount for the Coleson Cove project budget was $71 million out of a total project budget of $747 million, am I correct? Are you sufficiently familiar with the Coleson Cove budget situation?

MR. EAGLES: I believe that's correct.

Q. - And that contingency allowance would just on straight mathematics represent about 9.5 percent of the total project cost?

MR. EAGLES: I think that's pretty close. I didn't do the math.

Q. - Now I'm going to ask you to look at exhibit 16, slide 66, which is the outline of the budget for the Point Lepreau project.

CHAIRMAN: What slide, Mr. MacNutt?

MR. MACNUTT: 66.

CHAIRMAN: Thank you.

Q. - The contingency allowance for the Point Lepreau project is 35 million on a total as-built project cost of 845

million, is that not correct --

MR. EAGLES: Correct.

Q. - -- as we can see in slide 66. Now the contingency allowance for the Point Lepreau project is about 4.14 percent of the total project budget, would that not be correct?

MR. EAGLES: Your math seems correct, yes.

Q. - Thank you. Now would you please explain to the Board why there is such a marked difference in the contingency allowance for the two projects?

MR. EAGLES: Again, as I mentioned in earlier testimony, the contingency amount of $35 million has also IDC and escalation applied to that as it would be distributed over the course of the project, for a total amount estimated in the project of about $44 million. The amount that has been assigned for contingency there was considered in reflection of the significant portion of the work that's covered under both the direct costs in firm price contracts as well as the amount that has been expended to date, totalling 82 percent of the direct cost before contingency. And given the significant portion of that work that is firm we believed that the 35 million was appropriate.

Q. - Now what is the purpose of the contingency fund in the

Point Lepreau budget?

MR. EAGLES: The purpose of the contingency funds here is to cover work that is not included within the firm price scope of the contracts. And so that would be for additional scope items and for those portions of the work that are non-firm.

Q. - Now I am going to ask you to turn to slide 77 in exhibit 16, and go to the third bulletin on the page. And you will find that it states that with respect to the Point Lepreau project, 82 percent of the direct cost is firm, is that not correct?

MR. EAGLES: That was reference to the 82 percent of direct cost before contingency that was referenced in the evidence.

Q. - And which you just referred to a moment ago?

MR. EAGLES: Yes.

Q. - You have been asked this before, but I would just like to go over it again in the context of this series of questions, and that is would you tell us the difference between fixed price and the term "firm price" as you have used it in the evidence?

MR. EAGLES: Yes. The firm price is the contracted amount and it is subject to escalation as defined in the contracts themselves.

Q. - Now coming back to slide 66 in exhibit 16 once again, we see that of the total project cost of 845 million, only the first three items on the slide, namely Phase 1 for 38,000, retubing for 309 million and refurbishment for 141 million, which totals 488 million, are the subject matter of the firm price agreements, is that not correct?

MR. EAGLES: That's correct, yes.

Q. - Now when you state that 82 percent of the direct cost of Point Lepreau's project is at firm price, what you are really saying is that 82 percent of the $488 million just identified is at firm price and not 82 percent of the total contract price of $845 million, correct?

MR. EAGLES: That's correct. The escalation and IDC were not included there.

Q. - And because the $488 million portion of the total contract price is at firm price, it is subject to escalation as we have just described and discussed?

MR. EAGLES: The 488 million --

Q. - Yes.

MR. EAGLES: -- is -- sorry -- subject to escalation, yes, that's correct, not -- sorry -- the 38 million of Phase 1 costs that has already been expended there.

Q. - But at least it would be --

MR. EAGLES: The retube firm price and the --

Q. - 400 --

MR. EAGLES: 450 million.

Q. - Yes, I would call it 450 million, is subject to escalation --

MR. EAGLES: That's correct.

Q. - -- of that 488 million --

MR. EAGLES: That's correct.

Q. - -- in the first three items. What is covered "other", there is an asterisk there, what would be a description of that other?

MR. EAGLES: Again in the --

Q. - First of all, a description of it and is it subject to escalation?

MR. EAGLES: The work inside the $39 million identified as other includes -- it would be four items. The first and largest of those is the generator re-wind work, and as I mentioned earlier in testimony, at the time of putting our contracts together with AECL, a number of the vendors had indicated to us that without a commitment to the project they weren't prepared to invest substantial dollars to putting together a firm price proposal on that work. And so we had budgetary pricing there. And we felt that then -- that then it wouldn't be appropriate to try and put that into a firm price proposal.

The two other large items there are the severe accident monitoring instrumentation and the longterm containment heat sink issues which we did not feel were sufficiently far along in terms of the design -- preliminary design work to have identified those costs in a firm way. And so those were not included in the firm price.

And there is a small amount of 1.5 million for reimbursable scope and this is time and materials for incremental pieces of work that we might ask to be done, part of which is resolving those two preliminary design matters that you spoke of.

Q. - Thank you. And just as a cap on this line, therefore the $844 million or $45 million as set out in this total project cost in slide 66 is not a firm price for the project because the firm price portions of the total price only form a portion of the total price, is that correct?

MR. EAGLES: Yes. The firm prices are those which we have identified there.

Q. - Now if the -- are you familiar with the natural gas combined cycle option that was balanced against the Point LePreau project?

MR. EAGLES: That really would be Panel B evidence.

Q. - Are you familiar at all with the analysis that was done

on a fundamental basis that during the Point Lepreau shut-down for refurbishment, power would have to be purchased, but that if the natural gas combined cycle was constructed, the replacement energy would not have to be purchased during the period of time -- that period of time of construction?

MR. EAGLES: I guess the plan I believe indicated that if the alternative was chosen, then it would be in place by the time we reached end of life with refurbishment, but again I'm not intimately familiar with all of the details of the alternative option.

Q. - But are you sufficiently familiar to accept that if the natural gas combined cycle were constructed, that replacement energy would not have to be purchased during the period of its construction?

MR. WHITE: I think in answering that, we are quite aware that that analysis was brought to an equal basis so that the output from Lepreau would be matched by the natural gas plant and its replacement energy to take it up to the equivalent of Lepreau, yes.

Q. - Now in evidence that has already been given, it is my understanding that during the time Point Lepreau is shut down for refurbishment, assuming the project is approved, that $245 million of replace energy would have to be

purchased. Is that correct?

MR. EAGLES: I don't know the exact number. Again, that is Panel B evidence. It's somewhere in that order.

Q. - Would you accept that it is in that order of magnitude?

MR. EAGLES: I would say it is that order, yes.

Q. - Yes. So then when you are looking at the total project cost for Point Lepreau, you are looking at the $845 million shown on slide 66 in exhibit 16.

And you would really have to look at the additional $245 million replacement energy as a total cost to NB Power of the Point Lepreau refurbishment project, would you not?

MR. WHITE: Maybe I can answer that. We talked about that in earlier evidence, that -- in this analysis we have assumed that the plant life ends in 2006 at the end of March.

And therefore, in the normal context of replacement energy you wouldn't be supplying it. You have to have a source of generation to then supply the load after that.

And the question is what is the source of generation? If the source of generation is natural gas, then that is it. If the source of generation is determined to be refurbishment of Point Lepreau, then you obviously have to take that outage and you have to replace the power during

that period of time.

So to look at replacement power as one of the cost elements of the outage directly is not the right framework for looking at this. Because the framework is the end of the life of the unit exists or occurs in 2006, now what is the generation source after that?

In order to do the comparison between natural gas as a second alternative and refurbishment, we had to make all of the generation equivalent through the period to 2032. And therefore we have included numbers of replacement energy in order to make generation equivalent under either alternative.

Q. - Yes. But I'm not talking about NPV values. I'm talking about what NB Power would have to lay out for completion of the Point Lepreau Refurbishment Project by the time it comes on for commissioning or shortly after.

And that would be the $845 million as shown on slide 66 plus the 245 million for a total of 1.09 billion dollars.

Would not NB Power have to lay out those monies within that time frame?

MR. WHITE: NB Power does have to supply the generation, okay, off of whatever sources it has available, depending on the options that are chosen.

I think Panel B will answer the question more accurately in terms of how you do that economic analysis.

Q. - Now have you read the Hagler Bailly report?

MR. WHITE: Yes, I have, sir.

Q. - And you are familiar with the fact that their project cost estimate of $550 million included replacement energy?

MR. WHITE: Yes, sir.

Q. - And do you consider what they reported is wrong?

MR. WHITE: No.

Q. - Then why isn't replacement energy considered appropriate for this project budget on slide 66?

MR. WHITE: Well, I told you the basis on which we would look at that. And in terms of doing an economic analysis, you have to have the energy equivalent in either alternative.

(Technical problem)

CHAIRMAN: Go ahead, Mr. MacNutt.

Q. - Just moving on, Mr. White, we have previously identified that 82 percent of the total project cost for Point Lepreau is a firm price.

If we take the $488 million firm price portion of the total contract cost of $1.09 billion we have just been talking about, which includes replacement power, the firm price portion would represent 44.3 percent of the total

project cost of $1.09 billion.

Would that not be correct?

MR. WHITE: I see what you have done for your math.

Q. - Pardon?

MR. WHITE: I see what you have done for your math. It would appear to be about right.

Q. - Okay. Now I will go on to a question for Mr. Pilkington. And I would ask him -- it is probably not necessary because I'm going to cite what he said in his evidence. Exhibit A-1, evidence of Mr. Pilkington, page 3.

And I'm going to cite what he said. So it may not be necessary to look for that.

CHAIRMAN: What page number in Mr. Pilkington's evidence, Mr. MacNutt?

MR. MACNUTT: Exhibit A-1, Mr. Pilkington, page 3, line 20.

Q. - And Mr. Pilkington, you state that following the 1995 spacer location and repositioning outage, a series of major events resulted in long forced shutdowns of the plant. (1) 1995 wood cover event; (2) 1996 severely eroded boiler internal piping; (3) improperly configured fuel channel.

And then you go on to identify the staffing problems and other problems which gave rise to those other events,

is that not correct?

MR. PILKINGTON: That is correct.

Q. - Now you would agree that such events suggest a decided lack of supervision at Point Lepreau, would you not?

MR. PILKINGTON: In the events that were actually listed there, the first one, the wood cover event and the last one, the improperly configured channel, I would suggest are caused by problems in human performance and supervision. The quality of supervision would be one potential problem.

On the other event, the severely eroded boiler internal piping, that is I guess an equipment issue and relates to problems in the inspection and maintenance programs that existed at that time.

Q. - But you generally, in that portion of your evidence, identify that there were management and supervisory problems at Point Lepreau during that era, is that not correct?

MR. PILKINGTON: I'm not sure that I pointed exactly to management and supervision problems. Human performance problems, yes, of which management and supervision is certainly a portion.

Q. - Yes. You would agree that problems arising in that manner really lay at the feet of senior management of NB Power, would they not? They would have to have been aware

of these problems?

MR. PILKINGTON: I guess all of the problems with the performance of Point Lepreau in the end are the responsibility of NB Power and NB Power management and Point Lepreau management.

Q. - During this period what reports were being filed with senior management with respect to the operation of Point Lepreau, both personnel problems, management problems, supervisory problems and operational?

MR. WHITE: Maybe I can answer that. Although I wasn't directly involved at that time. But we recognized that Lepreau had run very well up until this point in time.

But we were recognizing also that it was a time to invest additional dollars in Lepreau. Because equipment was starting to age. And there were requirements for improvements in both aging equipment and maintenance programs and overall programs for the station.

But the history of Lepreau had been that it had run very well. And therefore the desire to invest more money in it was not necessarily agreed to by all parties.

And subsequent to these events we identified to our regulator that we failed to recognize the lifetime mission of a nuclear power station and the support that it would require in order to properly attain its desired outputs

and desired safety requirements.

Q. - Now you have identified that reports were made and discussions had with the nuclear regulator. How about your senior management in Fredericton and the Board of Directors of NB Power?

What communication with that level of the organization was being held?

MR. WHITE: There was a document written by the Director of Nuclear Operations at that time that identified the need for those things.

Q. - Can you tell us what reports were actually being presented to the Board of Directors with respect to these matters?

MR. WHITE: I can't tell you from my knowledge because I wasn't there that time.

Q. - Can anybody on the panel answer that?

MR. WHITE: I don't think anybody here would have been at that level that they would be able to directly answer that.

MR. PILKINGTON: No. In that -- in that time period I do recall making a presentation to the Board of Directors related specifically to the wood cover event. But again I would not be involved regularly in NB Power Board meetings.

Q. - So you don't know what reports with respect to the Point Lepreau situation ongoing were given to the Board of Directors on an ongoing basis?

MR. WHITE: I was there in '96 and '97. So I would have reported on those two items that are listed in your reference to the Board of Directors directly.

Q. - Now so we are not able to get a clear depiction of the communication system that was in place with respect to the problems that were cropping up at Point Lepreau? Is that a fair statement?

MR. WHITE: Well, from fall of '96 I was reporting directly to the Board of Directors on all these issues. So yes, I know about those.

Q. - Now if the Point Lepreau Refurbishment Project goes ahead, what assurances can you give us, give this Board that such problems will not occur again?

And that is by way of proper information being given to senior management and the Board of Directors.

And in providing your answer on this I would like you to be specific as to what is going to be done to ensure that there is proper and full communication.

MR. WHITE: Well, first off I report to the Board of Directors at every meeting on the operation of the nuclear plant. They have a written report that I write for them.

And they also get a verbal report at their Board meeting.

And they have the opportunity of course to question any aspects of the operation of the station, those things that go well and those things that don't go well.

Q. - Now that is in the current daily operation project, Refurbishment Project aside, is that correct?

MR. WHITE: It includes both the daily operation of the station and it includes current status of the Refurbishment Project. And there is documentation on both of those subjects.

Q. - Now what role do you expect that the Board of Directors of NB Power will play in ensuring that problems on a refurbished Point Lepreau of the nature that occurred that we have just been discussing will not recur?

MR. WHITE: The Board is particularly interested in improvement pieces of our programs, improvements in human performance issues, improvement in equipment, the operational status and the predicted future operational status of the unit.

And all events that referenced Lepreau, whether they be security or whether they be equipment, whether they be abnormal events that have occurred and what is the cause behind them and what are we doing to ensure that we have programs in the future that mitigate these things.

The Board is interested in outside opinions from our regulator. And I recently presented to them the report from the industry from last fall. And the new industry report has just been released. And I will be presenting that to them.

Also are interested in the reports from outside agencies like the World Association of Nuclear Operators who in fact come to our station and do reviews of our operations against world standards. And we have -- I have presented personally the results of those reviews to the Board.

Q. - Thank you. I'm going to -- this question will be directed to Mr. White. I'm going off onto another matter.

Now you would agree with me that any good project management team, once a decision has been made to commit to a project, must step back and look at the overall downside risk, that is the risk that the project simply may fail in total regardless of all the projection and probabilities that it will not fail.

Do you not agree?

MR. WHITE: Yes.

Q. - In other words, what the impact of total failure would be on the enterprise, is that correct?

MR. WHITE: I would say yes, that's correct. And that is

really part of what we tried to do on the front end, start and say what could cause total failure of this if we went through the project and came to some point that it was no go beyond that?

Q. - Thank you. Now Mr. Gillis went into this area fairly extensively during his cross-examination. I just want to touch on a few points.

For the purpose of my questions, the downside risk I'm referring to is the total failure of the project once constructed. You have a blowout. You try to commission it and you can't. It will not work. And reasonable efforts can't make it work.

What is the dollar -- impact in dollar terms if this happened on the NB Power enterprise?

MR. WHITE: I guess that I don't think I have the direct answer to it. Obviously the capital cost of the project is an exposure. The fact that we would have to supply replacement energy until the point in time that we could get an alternate source in place.

So we would be -- well supplying from our own surplus requirements in shoulder months, in summer months and then we would have to buy in the winter months, for sure, in order to do those kinds of replacement. And then you are faced with the capitol of putting another project in place

to supply that energy or else you can decide that you are going to continue to purchase.

Q. - So you -- if one were to add up those numbers, that would be the impact, is that correct? But you can't put a number to each of those three items?

MR. WHITE: No. I don't think that we have added them up in those terms. We have looked at what are the elements of this project that would cause us to be in a point of no return. And we don't believe that there is any reason why you couldn't start these units up. The work that is being done is all work that has been done before on either single basis or a full basis in terms of pressure tubes, full base, in terms of Calandria tubes, single basis. And all the other work that we are doing is the kind of work that we normally carry out on routine maintenance type outages, although we have packaged it altogether here in one, and some of them might be very large things, like rewinding of the generators by themselves.

We have tried to appropriately assess those risks and say which ones might be show stoppers in that process. And how would you mitigate those show stoppers.

Q. - And that's part of what the Ernst & Young report is, is it not?

MR. WHITE: That's correct.

Q. - Yes. But you didn't resolve it into a dollar figure yourself as a part of your --

MR. WHITE: We didn't assume at the end of the day that we would have a complete and total failure that we would say the plant therefore is no longer functional and that we need to move on to some other generation source.

Q. - So you as well didn't determine what the total failure scenario -- what the impact would be on NB Power's debt situation?

MR. WHITE: I don't believe that we have run that as a financial case, but Panel B could answer that more accurately.

Q. - But you would expect it to increase substantially as a result of this, would you not?

MR. WHITE: Well we would have all the debt costs that are part of this project and not the return elements that would come from it.

Q. - Do you know what portion -- or perhaps Ms. McKibbon can answer it, what portion of the present net debt of NB Power is attributable to Point Lepreau.

MS. MCKIBBON: Offhand, Mr. MacNutt, no, I can't answer that question.

Q. - Can you give us a ballpark or an estimate?

MS. MCKIBBON: No, that would be more appropriate to address

to Panel B.

Q. - Now you would agree, Mr. White, that it's possible that cost overruns could occur in this project, not withstanding the assurance guarantees and warranties given by AECL, is that -- would you not agree?

MR. WHITE: It's always possible on any project, yes.

Q. - Now it's my understanding that cost overruns occur from time to time during the course of construction of a project and usually do not occur as a lump at the end of the construction schedule, is that not correct?

MR. WHITE: That's correct.

Q. - Now working with the figures presented in the evidence of this hearing, at what order of magnitude of cost overruns, that is the size, the cost of the overruns in dollar terms would you recommend to NB Power that the construction project be terminated?

MR. WHITE: Well I think the answer is maybe in Panel B that this project is still valid from a capital cost point of view at something in excess of a billion dollars, but Panel B would give you the better answer to that.

Q. - Now the billion dollars you just suggested represents what in your mind when you stated it?

MR. WHITE: Well it was related to one of the stress cases, what if the capital cost overran and at what point would

the project become neutral between it and a gas project.

Q. - Now --

MR. WHITE: I think it's in one of the interrogatories but I don't remember the answer and it's something over a billion dollars, and Panel B would give you the right answer.

Q. - Yes. Thank you. Now just come back to something you said earlier that -- on looking at the downside that during the course of construction you might arrive at a point where you would have to recommend to the Board of Directors that the project be terminated and not gone through to completion of projection -- construction. Leaving aside the dollar amount we just discussed, what events would give you -- give rise to you recommending to the Board of Directors that the project be determined -- be terminated prior to completion?

MR. WHITE: Obviously if the regulatory environment changed significantly on us, and we have no reason to believe that it would, the regulator, our safety regulator, CNSC has indicated evolutionary advancements in regulation as opposed to revolutionary advancements in regulation, but if there were significant changes in that early in the project before we had spent significant money, then that might change the economic case here and we would want to

relook at that at that point in time.

From the project point of view, I don't think there are any design issues particularly that are insurmountable that would cause an end to this project. If we carried out certain inspections of turbine rotors, which we are doing today and had to replace all the turbine rotors, and if those things added another 50' or $100 million if we complete the analysis of cabling and say we have got to add another $100 million because of PVC jacket problems on cabling, which again we don't think is -- we think there is a pretty low probability on it, those things might add significantly to dollars here that would change the economic cases significantly.

Lastly, when you get into the actual outage work, Mr. Eagles related to welds inside of the Calandria. Our analysis says that those welds should still be in a ductile state to go out to 50 years here. But if we got inside the Calandria and found major problems in those things, there would be very significant efforts to try to repair those kinds of things. But that's extremely late in the project. That's when we are right in the middle of it.

I look at this project predominately as an environmental project that Lepreau is the base for our

environmental emissions and things here in the province. And it provides the ability to continue to meet the evolving environmental standards as we showed in the opening presentations, particularly in the carbon area. But it also of course gives us a significant base zero reductions -- or zero emissions in the other environmental components SOx and NOx and particulates and mercuries and all those kinds of things.

So from a project point of view I think it -- it's the one project going forward that helps us distinctly in this province to be good corporate citizens in meeting the environmental requirements that our society wants these days.

Q. - Thank you. Now a question for Mr. Eagles on subtrades. Does AECL, as your general contractor, have full control over subtrades on this project?

MR. EAGLES: Subtrades in respect to -- I'm just trying to get a clarification on what you mean by subtrades there?

Q. - No --

MR. EAGLES: The subcontractors you --

Q. - Yes, it really would be. AECL as the general contractor --

MR. EAGLES: That's correct.

Q. - -- have full control over all subcontractors on the job?

MR. EAGLES: Yes. Their intention, as I understand, is to subcontract substantial pieces of the work in all areas, in the retube area included. But in the retube slightly different where they would use -- utilize a lot of their own expertise in the conduct of the work and using the specialized equipment that they will have on site. So in the sense of being the general contractor and in subcontracting those portions of the work, they would have control, yes.

Q. - Does NB Power have any direct influence or control over the monitoring of the subcontractors or is that strictly AECL and NB Power speaks only to AECL?

MR. EAGLES: The work that gets conducted on the site is always under the supervision and watchful eye of us as the owner and the licence holder. And so if there is in fact work going on which we need to address, then we would address that through AECL to the subcontractor, but ultimately as the licence holder, we have responsibility for all the work that goes on.

Q. - But you cannot instruct a subcontractor directly?

MR. EAGLES: It would not be the contractual relationship we would have with the subcontractor.

Q. - Now is it your understanding that all subcontractors will be bonded both with respect to performance and labour and

material?

MR. EAGLES: I believe that's my understanding, yes.

Q. - And those bonds would be in favour of the general contractor, AECL and for the protection of the workers?

MR. EAGLES: If -- I would have to go back to the contract document to refer to that particular section. And I don't recall right offhand but I believe that's the case.

MR. WHITE: If I might add a piece to your earlier question there with regard to subcontractors and monitoring of them. The normal method that we use in terms of outage operations at Point Lepreau is that on our annual outages and all other outages, we have daily meetings that include all of the appropriate parties and where we have major subcontract work going on, we have that major contractor also sitting at that table. And our expectation would be with AECL that we would have a similar arrangement. We -- because of the length of this outage we might not run it on a daily basis, we might run it on a weekly basis or a twice a week basis. But that AECL would sit at that table and if there are major subcontractors that they have on site, we would also expect them to bring those to the table.

Q. - Now I understand from the contract documents that -- between AECL and NB Power, that NB Power has the ultimate

say or decision making authority on all change orders, is that not correct?

MR. WHITE: Yes.

Q. - Now what is the situation between AECL and the subcontractors with respect to change orders and what influence does NB Power have on any change orders originated at that level?

MR. WHITE: That's really AECL's responsibility under their contract.

Q. - And do they in turn have to seek approval from NB Power?

MR. WHITE: Not normally. We wouldn't expect them to. We expect them to manage their work.

Q. - So change orders could be issued between AECL to subcontractors which never come within the view of NB Power for approval?

MR. WHITE: It is AECL's responsibility to execute the work and acquire whatever subcontracts that they need to do that. We have indicated our desire that as much of that work as possible should be with New Brunswick subcontractors, but it's their responsibility to manage that and we are not necessarily privileged either to the direct subcontract or the direct subcontract purchase orders. And so we wouldn't necessarily be privileged to a specific change order they might make with a

subcontractor.

Q. - Now the following is a question that could be answered either by you, Mr. White, or Ms. McKibbon. And I believe it was you, Mr. White, in response to a question by Mr. Gillis you said -- and this is from page 768 of the June 3, 2002 transcript. "I might point out that other plants have been successful in improving their performance and we have been able to benchmark against those plants." Do you remember that?

MR. WHITE: We do benchmarking through the World Association of Nuclear Operators and, yes, we are able to benchmark against other plants, both there and through our CANDU owner's group.

Q. - Now I would like you to turn to exhibit A-1, appendix B-1, Integrated Resource Plan, at page 19, table 3-5, which is a table entitled "Power Cost Comparisons". And I will just go through that again. Exhibit A-1, appendix B-1, which is the Integrated Resource Plan. Page 19, table 3-5, power cost comparisons.

CHAIRMAN: I'm having difficultly hearing the end of that, Mr. MacNutt. Just thought I would give you heads up.

MR. MACNUTT: Pardon?

CHAIRMAN: Yes. Having difficulty hearing what you said as you are what I say, at the end.

Q. - So is everybody on page 19, table 3-5? Thank you. I would like now -- if you go to the line Point Lepreau refurbishment and look across to the second last column. And you will find under the heading, "Total (cents per kilowatt hour) 2006 dollars". We find that it will cost $5.68 per kilowatt hour to produce power from the refurbished Point Lepreau, is that not correct?

MR. WHITE: That's what the table says, yes.

Q. - To produce power -- and your answer is yes.

MR. WHITE: That is what the table says.

Q. - Thank you. And you accept that?

MR. WHITE: This is Panel B evidence you are into now, sir, and the details of that would be coming from Panel B. But that is what the number is on the page.

Q. - Is it not evidence of NB Power and you accept all the evidence presented by NB Power in this hearing?

MR. WHITE: We accept this evidence, yes.

Q. - Can you sell power into the export market from the refurbished Point Lepreau at that price and make money?

MR. WHITE: Well we don't sell Lepreau into the export market, except on vary rare circumstances. It supplies New Brunswick's base load because it is the economic energy source to supply New Brunswick's base load.

Q. - If surplus power -- if you were in a situation where

there was surplus power and Point Lepreau was running, and it is a base load plant, would not the surplus power being exported be that being developed by Point Lepreau?

MR. WHITE: About the only time that ever happens is in the spring time when we have very high hydro and if we had low loads. And if you are then in position where you would export it, you export on the basis of incremental cost. And the incremental cost is the variable that you show there .83 cents.

So you export it at those incremental costs plus whatever profit we want to put on it.

Q. - Now have you formally benchmarked the cost of producing a kilowatt hour of electricity from the refurbished Point Lepreau with the cost of producing power from other comparable size CANDU power plants in Canada?

MR. WHITE: Sorry. Was there a question there?

Q. - Yes. Have you formally benchmarked the cost of producing a kilowatt hour of electricity from the refurbished Point Lepreau with the cost of producing power from other comparable size CANDU power plants in Canada?

MR. WHITE: I don't believe we have, sir.

Q. - When you mentioned in your response I quoted -- response to Mr. Gillis I quoted to you earlier, what did you mean by saying that you had benchmarked against other plants?

MR. WHITE: Well we benchmark our human performance programs. We benchmark our engineering programs. We benchmark our equipment performance and our meeting of safety standards and reliabilities against other plants.

Q. - So you are telling me that as a test to see if the Point Lepreau refurbishment is appropriate, you didn't benchmark the cost to produce electricity by the refurbished Point Lepreau against what it cost to produce electricity in other nuclear reactors in Canada, just to see if it would be in the same range?

MR. WHITE: Again, that is a Panel B question. Our obligation under our mandate in New Brunswick is to supply the energy needs of the province. And we look at the sources for that and sources that are listed in table 3 of our alternatives for doing that on a going forward basis. And Panel B would respond to the details. They developed that table.

Q. - Again Mr. White, I guess you are under the gun this morning, on another topic. You would agree with me that the evidence for this hearing was filed with the Board on February 25, 2002 and dated that date as reference to exhibit 1 with indicate. Is that not correct?

That is the pre-filed evidence we are talking about here.

MR. WHITE: Yes, sir.

Q. - Now in -- I am going to ask you to turn to exhibit A-16 slide 66, which we had out here a moment ago. And you would agree with me that the total projet budget as built cost is stated to be $845 million rounded?

MR. WHITE: Yes, sir.

Q. - Now you were questioned about this figure by Conservation Council on May 28th. At page 243, lines 13 and 16 is a transcript of the hearing for that day. You confirmed that the 844.6 million, to be specific, is the correct figure for the project as presented to us in the evidence we are considering today. Is that correct?

MR. WHITE: Yes.

Q. - Now you also advised that the 844.6 million dollar figure is a revised figure when compared to the 904 million dollar figure referred to in the minutes of the NB Power Board of Directors meeting of December 18th, 2001. Is that not correct?

MR. WHITE: Yes. That is correct.

Q. - And that Board of Directors' minutes appears at exhibit A-6 CCNB-102 in tab 3, just for reference purposes.

Now in response to CCNB-102 we find that there was a Board of Directors meeting held on January 18th 2002. Is that not correct?

MR. WHITE: I don't remember exactly. But I would take your word for it.

Q. - Perhaps you would exhibit A-6, the response from CCNB-102 at tab 3 just to refresh your memory. Because my next question is were you in attendance at that meeting?

CHAIRMAN: A-6 CCNB number?

Q. - A-6 CCNB-102 which should be under tab 3 which is a collection of Board of Directors minutes. And we are looking for January 18th 2002 Directors meeting.

CHAIRMAN: January 18th of what year Mr. MacNutt?

MR. MACNUTT: It would be January 18th 2002.

MR. SOLLOWS: I have January 22nd 2002.

Q. - Sorry. And what I am looking for is just confirmation that it was -- that the project cost of $904 million was before the Board of Directors on that January 22nd date. Would you confirm that for me?

MR. WHITE: Page 10 of those minutes of the Board meeting say 904 million, yes.

Q. - Thank you. Now, that was the project cost at that time. Is that not correct?

MR. WHITE: Yes. And I believe I reported that we subsequently corrected an error which was in that number due to double counting of escalations.

Q. - Yes. So the upshot of it is 38 days following that

January 22 meeting, you filed the evidence in this hearing on February 25, 2002. And the projet budget -- approved project budget had reduced by $60 million?

MR. WHITE: Yes.

Q. - Now still staying with exhibit CCNB-102, but now turning to the December 18th 2001 minutes of meetings of the Board of Directors, I think you will find a spreadsheet that was before the Board at that time. Am I not correct?

CHAIRMAN: What page is that, Mr. MacNutt?

MR. MACNUTT: That is page 9, Mr. Chairman.

CHAIRMAN: The second set of 9, I guess.

Q. - For the purposes of this question you want to turn --

CHAIRMAN: We are having trouble hearing you, Mr. MacNutt, and secondly, --

Q. - I want you to turn -- I guess it will be virtually the --

CHAIRMAN: The last page.

Q. - The last page and there is a spreadsheet. Would you agree, Mr. White?

CHAIRMAN: Just a request, in the future if you have to put in a spreadsheet like this, would you issue magnifying glasses too?

MR. WHITE: Yes sir, there is a spreadsheet there.

Q. - Thank you. Now it appears from a review of this spreadsheet that more changes in the project were made

than simply the total project cost of two hundred and -- excuse me, $904 million prior to February 25th, 2002, filing of the evidence in this matter. Would that not be correct?

MR. WHITE: This meeting was in December. And yes, there was lots of work done between December and the filing.

Q. - Okay. Now by reference to this spreadsheet, would you please take us through it and show us where other figures in addition to the total project costs have changed and provide a reason for each of the changes to reach the project budget costs which is before us now?

MR. WHITE: I think that is really Panel B evidence. If you want the details of that, that similar spreadsheet is in Panel B.

Q. - But you were at the Board of Directors meeting, were you not?

MR. WHITE: I was at the Board meeting, yes.

Q. - Can you tell us what the components and the value of those components that were changed to bring the contract price down?

MR. WHITE: You want to know what change between the 904 and 845?

Q. - Correct. In detail.

MR. WHITE: Well I told you that the major error was in the

escalation numbers.

Q. - Well what were the minor changes and the value? What I would like is an accounting of the items and the value of each item that changed?

CHAIRMAN: Mr. MacNutt, excuse me, if this is a Panel B, then I suggest we put Panel B on advisement and have them bring that in when they take the stand, rather than -- if you have particular items you want to refer this particular panel to, then by all means do so. But if you want a complete review of this I would suggest that it is Panel B evidence, as the witness has said. And it is probably Panel B that should do that analysis for you.

MR. HASHEY: We will undertake to see that is done.

Q. - All right. We will defer it. And perhaps NB Power could produce that detailed accounting.

MR. WHITE: I think just to close off. I don't know if it helps or not. But I don't believe there was any changes on this sheet that affected the change in the price. The change in the price was all around that one escalation issue.

This sheet, as I say, would be revised because it is not the actual detailed analysis. It is a spreadsheet comparative analysis and Panel B will refer you to the actual detail analysis.

Q. - Okay. But what I would also like from you, as the engineer who is putting the project to the Board of Directors, to tell us what you consider to be the items that caused the price reduction and the value of each of the items?

MR. WHITE: I told you the one item. And that is it as far as I know.

Q. - So 99 percent of the price reduction between 904 million and 845 million is attributable to that one item?

MR. WHITE: And Mr. Eagles is just reminding me that we had the error on that line. And we also made an adjustment for insurance costs.

Q. - Now still with visits to the Board of Directors by either you or Mr. Eagles, were any of you present at the Board of Directors meeting when approval of the Point Lepreau project was sought from that Board?

MR. WHITE: Yes.

Q. - Have you looked at exhibit A-20, which was filed I believe yesterday morning, which is the updated financial information for NB Power? Well it was perhaps filed on Monday morning.

MR. WHITE: I have received it, yes.

Q. - Have you gone -- have you looked at it yourself and reviewed it?

MR. WHITE: I have looked at it.

Q. - Now were the financial projections contained in exhibit A-20 presented to the Board of Directors at the time they gave approval to the Point Lepreau project?

MR. WHITE: Again, that would be Panel B evidence to come from our vice-president of finance.

Q. - Do you know by virtue of your attendance at the Board of Directors meeting what financial information was before the Board of Directors at the time they made their decision to approve the project?

MR. WHITE: The information that was handed out is an update to the end of 2002. And that wouldn't have been available at that time. So the financial information that is available to the Board or to our Board would be the results of -- of the year, up until December. And it usually terminates in the month prior to that. It would be either the October or November numbers for the financial year. And they would add the -- I think it is -- March 2001 was the forward projection base that was revised in this document that was handed out.

Q. - Now coming on to another topic, again to Mr. White. I am going to ask you to turn to exhibit A-17 which is the -- and there are two agreements in there, one of which is the refurbishment agreement. And I want you to turn to

appendix A in the refurbishment agreement. I will just give that again, exhibit A-17, the refurbishment agreement, appendix A.

MR. WHITE: Just give me a moment. I will get rid of a couple of these books. A-17?

Q. - No, exhibit A-17, refurbishment agreement, appendix A. And please turn to page A-4. And I am going to refer to that and the several pages following as examples.

MR. DUMONT: Page A-4?

Q. - Correct. Appendix A, A-4. And I believe these following pages are entitled "Fixed Price Scope Items". Is that not correct?

MR. WHITE: A-4 is reimbursable scope items.

Q. - Yes. But if you go over to the subsequent pages each one is entitled I believe "Fixed Price Scope Items". And each page is a list of an item.

MR. WHITE: Page A-4, item A-2 is fixed price scope item.

Q. - Yes. If you go over to the next page you will find, I believe, scope item number FS 1 on page A-4. And then there is scope item FS 02 on page A-5. Is that correct?

MR. WHITE: Yes.

Q. - And on each of those pages the contractor AECL is required to provide the design for the item. Would you not agree?

MR. WHITE: That is correct.

Q. - Have the items in appendix A been priced yet?

MR. WHITE: Yes.

Q. - Even though they haven't been designed yet? Or have they been designed?

MR. WHITE: That is the total price that we have for AECL for this contract.

Q. - It is my understanding of the items listed from page A-4 on that those are things to be done by AECL once the contract is under way, that is to design and provide what is described in the item. Is that not correct?

MR. WHITE: Yes.

Q. - And what you are saying is that there is a fixed price for each of those items even though they haven't been designed and constructed yet?

MR. WHITE: They gave us the firm price on this contract, not each item.

Q. - Okay. So your interpretation is that it is up to AECL to design and bring it in at the price they think they can bring it in and still stay within the firm price for the total contract?

MR. WHITE: Yes. AECL did the estimate of all these items and put together their pricing package and gave us a total price for this refurbishment piece of work.

Q. - So the fact that they elected to put a price on this without the design having been completed is at their risk?

MR. WHITE: Yes. That is what we asked them to do.

Q. - And have you done any analysis to determine if their pricing on those items, being the total contract price, was reasonable?

MR. WHITE: Yes, we have.

Q. - In what way did you do that?

MR. WHITE: We asked AECL to open their books to us. And they opened them in confidence to us to show how they had developed the pricing on it. And we were interested in two issues particularly.

We were particularly interested in whether we got fair value for the work that was going to be done. Because this is a negotiated contract.

And the second thing we were interested in, is there a price robust enough to be able to actually execute this work without AECL getting in trouble.

Q. - And did you do that analysis on your own? Or did you have independent experts assist you in assessing whether or not the pricing was realistic?

MR. WHITE: Mr. Eagles might want to refer or add to my comments here. But we certainly did with our in-house staff. And we have an external advisory group that

advises to the president. And they reviewed the work that we did.

Q. - Thank you. I am now going on to another matter and address this question to Mr. Eagles. I am going to ask you to turn to exhibit A-16, in the slide 63. Do we have that?

MR. EAGLES: I do. And I wonder if I might impose for a biology break at this point in time before we continue?

CHAIRMAN: Absolutely. We will take our mid-morning 15 minute break and be back in at 11:00.

(Recess)

Q. - Mr. Eagles, we just had you turn to exhibit A-16, slide 63.

Now what licence does NB Power currently hold from the CNSC to operate Point Lepreau?

MR. EAGLES: That would be more appropriately a question for Mr. Pilkington.

Q. - Well, perhaps Mr. Pilkington can answer it and answer the following questions.

MR. PILKINGTON: Okay. NB Power holds two associated licences. One is a power reactor operating licence for the unit itself. And the other is a waste management site licence.

Q. - Now I believe you described, or one of the panel

witnesses described, how CNSC would treat the outage for the Point Lepreau refurbishment.

Would you just refresh our memories on that?

MR. WHITE: Yes. I did that. We proposed to the CNSC in terms of our licencing framework that this work that we were going to do would be treated as a maintenance outage and it would come under the current operating licence, and that as such there wouldn't be a requirement for change under that operating licence.

Q. - Now would you tell us what you would do if CNSC made a CNSC Board decision to terminate the Point Lepreau operating licence during the refurbishment shutdown and require NB Power to reapply, upon completion of the work, for a new operating licence?

MR. WHITE: Well, there is no basis. I don't think that CNSC would terminate the licence. They obviously have that right. But they could only do it on a justified basis. And secondly, they also have the right to impose certain conditions on the operating licence.

We are currently in application for the operating licence that expires in October of this year. And as part of that licence application process, it is a public process that CNSC reviews our operating performance over the past period.

And they look forward to their direction and issues that they want addressed in the future. And if there are items of significance, they have under their authority the ability to put licence conditions in place on the operating licence.

So if you fast-forward to the next licence period, we are currently in a two-year cycle, and as I reported I believe earlier in this hearing, that we have applied for a three-year licence cycle. And the staff at this point I believe are recommending a three-year two-month cycle.

That would mean that we would then be in front of the Board again before December of 2005. And at that point in time we would then be applying for a licence that does cover the refurbishment period.

And I'm sure the Board would want to have more details relative to the refurbishment and more details from their staff as to the staff position that they have taken relative to all of the refurbishment issues.

We have presented information to the Board as recently as the 22nd of May relative to the overview of refurbishment and what we are doing. And that was part of the environmental assessment hearing process.

So we have no reason to believe that we will not have an operating licence. We have no reason to believe that

there will be changes in that operating licence.

Q. - What have you built into your project schedule to allow for the fact that the Board may not accept its staff's recommendations vis-a-vis what you have been led to understand and in fact require, a reapplication because of the refurbishment?

MR. WHITE: We haven't built pieces into our schedule that says that we would have a different operating licence. Because the staff have essentially accepted the position that we could do this under an operating licence that doesn't require a change.

That was the purpose of the licencing framework work so that we would get a good understanding of what staff position would take.

Q. - Now with respect to overall contract administration on the Point Lepreau Refurbishment Project, would you, Mr. White, please identify for the Board the senior members of NB Power project team or the Point Lepreau Refurbishment Project, providing us with an outline of the work experience for each member, with particular emphasis on the management of comparably-sized projects and related work experience and training that would qualify them for senior management positions on this Refurbishment Project?

MR. WHITE: Well, first off, myself, I'm ultimately

responsible for this. I have been part of the commissioning teams for the last three major projects that NB Power built here, including the Point Lepreau station itself, the Coleson Cove station and the Belledune station.

I was the manager in charge of starting up and operating the Belledune station. I was the maintenance superintendent in charge of pieces of the commissioning of Coleson Cove and of Point Lepreau. And I have been running power stations for my 35-year career. And so I have a reasonable knowledge of the basis on which a power station runs and operates.

I spent 10 years in Lepreau from 1975 to 1986 in terms of the operating group initially reviewing design work that was being done to ascertain that the operating parameters were in fact satisfactory and in terms of actually starting up the station.

Mr. Rod Eagles spent four years of his early career at Lepreau as a technical engineer. He worked at the Coleson Cove station, carried out major reheater replacement work in that station as functions of technical engineering in that station.

He was the maintenance superintendent in Belledune as we started up that station and ran that station. He also

was the Regional Manager not only of Belledune but of the northern plants including Dalhousie Orimulsion station and Millbank combustion turbine station.

Mr. Stu Groom, who has been the chief project -- or chief engineer, has over 30 years in the nuclear business. He came to us in 1975, was involved in design reviews during the early operational review process of the design to ensure adequacy with regard to the capability of the station to meet operational needs.

He has been a shift supervisor at our station and licenced as such to operate the station by the Canadian Nuclear Safety Commission. He has been the Technical Manager of the station responsible for all subsequent design changes and ensuring that those design changes meet the safety basis for the station.

He is a principal in interfacing with the CNSC on technical issues and with agencies that provide design and services such as AECL and many other design agencies.

Keith Stratton is our Commissioning Manager. He has been with Point Lepreau since very early in the life of the station. He has been the station maintenance superintendent for a good period of time. He has been in charge of the fuel-handling group that fuels the reactor on an ongoing basis.

And he has been with the Refurbishment Project group for the last two years, specifically dealing with the issues of getting the station ready for refurbishment and looking at the commissioning issues, the contracts, the value added by the contract elements, the scheduling of the work, the ability to do the work, the temporary structures and requirements that are part of that work.

Bill Mouland is a civil engineer who is our Construction Manager. His background includes work at Lepreau during the construction of Lepreau, working for the resident engineering site staff.

He also worked for the operations group in Point Lepreau for a significant number of years, assisted me in evolutions around reactor vaults and reactor vault problems early in the operation of Lepreau.

He is the -- was the Project Manager for the gas turbine installations in Millbank, the combustion turbine installations in Millbank. He was the on-site Resident Support Project Manager for the Dalhousie Orimulsion Conversion Project.

Paul Thompson is our Licencing Manager. Paul Thompson originally worked for AECL in the licencing and safety area. He has been the superintendent and also the acting manager of safety and licencing group in Point Lepreau

operations for many, many years.

Regular interface with the CNSC in terms of dealing with normal action items, generic action items, evaluating the requirements evolving in regulatory standards, and putting in place programs that would meet those evolving standards so that the station is in fact able to operate under its licence and meet its licencing requirements.

He spent the last two years as the Safety and Licencing Manager of the project and is the fundamental author of the framework documents with the regulator in terms of a proper understanding of the scope of work that this project would undertake, the licencing requirements and the ability of this project to meet the ongoing safety and licencing requirements of the station.

Q. - Thank you. Again with Mr. White, I believe you mentioned that one of the elements of getting ready for the -- an essential element of the overall Refurbishment Project is a labour stabilization agreement, is that correct?

MR. WHITE: Yes.

Q. - Has that agreement been negotiated?

MR. WHITE: It is in negotiation. It hasn't been concluded.

Q. - What assurance can you provide this Board that that agreement would be negotiated and signed in time to allow

the Refurbishment Project to proceed on the schedule you

have put forward for -- assuming that it receives all necessary approvals?

MR. WHITE: Well, for this project, physically you don't need it in place until you actually have the outage. We are attempting to put it in place very early.

And actually because of the time frame here -- it is quite an extensive time frame for this job -- I think it is fair to say that the trade unions have more difficulty coming to grips with the escalation that may occur over that time and where limits should be on CPI's during that period of time.

But it is the type of agreement that was put in place as a result of legislation changes in the Industrial Relations Act subsequent to the building of Lepreau, when we moved to the projects in the north, Millbank, Dalhousie and Belledune.

It proved to be a very functional arrangement with both the trades and the contractors and ourselves. And it is believed by all those parties that, to my best understanding, and I talked to them all, that it is the right form of agreement for advancing Lepreau here.

And we had general agreement that that is the way we would proceed. And I say general agreement with the Construction Association and with the President of the New

Brunswick Trades Council, that we are just in the detailed negotiations as to where the caps and things should be on that contract.

Q. - And the labour stabilization agreements will provide for a guaranteed rate of wage increase, is that correct?

MR. WHITE: Yes. Essentially they draw on the base of the individual trade union labour agreements that they have here.

And they provide for labour stability by predetermining what the wage increases would be in that contract.

Q. - Now will there be a cap or limit on the wage increases in those labour stabilization agreements?

MR. WHITE: That is normally the way they are structured. And that is part of the negotiation process today.

Q. - Are you aware of the Irving Refinery Project where there was a wage cap which was lower than CPI plus 1 percent and it was invoked twice during the project and enforced?

MR. WHITE: I'm aware that they used a somewhat similar form of stabilization during that. But I don't know the details of it.

Q. - Now you mentioned that you have expectation that the labour stabilization agreement would be negotiated, signed and in place prior to the outage.

What is the risk if it is not with respect to escalation of price?

MR. WHITE: I don't think escalation of price is our primary concern. Our primary concern is no-strike type clauses that go as part of that. So you have labour stability over the duration of the project.

You don't really I think want enter into these projects unless you have already agreed on stability.

Q. - But if the price aspect, the wage formulas were not agreed to and in place prior to the commencement of the outage, and construction starts on the ground, it would introduce an element of uncertainty as to your project cost, would it not?

MR. WHITE: Well, it introduces an element of risk in terms of completing the project on time, on schedule, on cost, yes.

Q. - Thank you. Now Mr. Pilkington, on Tuesday, May 28th, you were cross-examined by Mr. Coon on the matter of remedial work carried out at Point Lepreau and other CANDU generating plants. This information appears at pages 419 through 423 of the transcript for that day. And as part of that exchange you were referred to exhibit 13, CCNB-26, which contains a list of capacity factors of other CANDU reactors following remedial work. Do you remember that?

MR. PILKINGTON: Yes, I do.

Q. - Now you mentioned in that testimony that some of the other plants had teething problems in the early years but that Point Lepreau only had minor ones. You stated that this might have been due to the fact that these plants were using some technologies that were different from those that had been used at Point Lepreau, is that correct?

MR. PILKINGTON: I don't recall specifically but that sounds reasonable.

Q. - Now it's my impression that you -- my understanding that you said that the lack of major teething problems at Point Lepreau would be a plus for the refurbished Point Lepreau. However, you also said that certain things would be done differently at the refurbished Point Lepreau so as to avoid the problems that arose later in Point Lepreau's life Is that a fair statement?

MR. PILKINGTON: Yes, that's a fair statement.

Q. - Now how do you know that these new methods and materials to be used in the Point Lepreau refurbishment project will not cause major teething problems for the refurbished Point Lepreau plant?

MR. PILKINGTON: I guess the reason that I wouldn't expect problems is that there is no fundamental new design that

is going into the refurbishment project, that the changes that are being planned -- and Mr. White or Mr. Eagles may want to comment from a project perspective -- my own perspective is that the technologies that are going to be used in refurbishing Point Lepreau are evolutionary rather than revolutionary and won't pose any significant risk to the start-up of the plant.

If you look at the longterm operation of Point Lepreau and where we have had reduced capacity factors later in life, I think I had an undertaking, which I misunderstood, from the Conservation Council to look at how that has impacted the life of Lepreau or the capacity factor later in life, and although I didn't report on it, I did go back and look at in fact what the impact of that has been.

And so if I look at the single issue of fuel channels and feeders that will be corrected by refurbishment, and if I look at the impact of that on the operation of Lepreau, it has caused a significant reduction in performance later in life.

I would go back to the fact that in the first 12 years of operation of Point Lepreau the unit had a capacity factor -- just a moment here -- I believe it was 93.4 percent -- I'm sorry -- 93.3 percent. And then it was pointed out that since April of 1995 the performance has

been significantly lower. And I think I agreed with information that the Conservation Council had that said that since '95 to the end of 2001 the capacity factor -- the average capacity factor of Point Lepreau has been about 66.6 percent.

But I did then go back and extract the time that has been spent in maintenance on the fuel channels and feeders, two components which have caused significant outage time, significantly reduced capacity factors and which will be replaced by refurbishment.

And what I found is that in fact half of the total outage time at Point Lepreau since April of 1995 can be attributed specifically to those causes.

And so in fact if you remove those as causes or if you remove the time that has been spent addressing those issues, then since 1995 the capacity factor at Point Lepreau would have been 83.2 percent.

And in fact the lifetime capacity of Point Lepreau would be about 88.4 percent.

Looking at one other significant event and that being referred to earlier being the boiler cover event, which in fact caused a three month extension -- three month-plus extension to the 1995 outage, I would argue there that the causes of that event relating to human performance and

foreign material exclusion have been addressed by the plant and such an event would be unlikely in the future. If you also remove that event, then the performance from April 1995 to present would be in fact 87.2 percent capacity factor and the lifetime capacity factor for the station would be approximately 90 percent.

So from those two specific causes have accounted for a very significant amount of the lost reliability from the station.

So with the changes in refurbishment not fundamentally affecting what is inherently a good design, with the removal of fuel channels and feeders as causes of reduced reliability in the future, barring any improvement in the performance of other equipment and of human performance and of work processes, I would conclude that you could expect in the order of 88 to 90 percent capacity factor from the unit in the future.

When you add in the fact that we recognize that there are opportunities for improvements in human performance in other equipment performance and in work processes, and the fact that we have programs underway now to make those improvements, then I think we end up with a very conservative judgment that the lifetime capacity factor of Point Lepreau following refurbishment would be 89 percent.

Does that answer your question, sir?

Q. - Yes, thank you. But I would like to go into something slightly different, but along the same line, and that is it is my understanding that Mr. Groom in his evidence -- I can give you the citation, but you don't have to look at it because I am going to quote from it, unless you wish to check me, exhibit A-1, Groom 1, Appendix A-2, and that's his report. He says, premature age-related degradation of the fuel channel assemblies has resulted in limits on the power production performance of Point Lepreau generating station. And in the absence of Mr. Groom what I would ask you to explain to us along somewhat the same lines you have just been answering is, what assurance can you give this Board that unknown degradation mechanisms will not occur at the refurbished Point Lepreau.

MR. PILKINGTON: And I guess I would point to a number of things. First of all, the changes in technology around the fuel channels are relatively minor, they are straightforward and they are addressing specific known issues with the design.

Likewise with the feeders, the problems of feeder cracking and erosion/corrosion in the feeders, will in fact be addressed by the new feeder design.

And these are -- the fuel channels and feeders are not

active components in the sense that they don't actually operate to support the plant. They are really a part of the structures of the primary heat transport system.

I'm just trying to think of where I was going to go next.

Perhaps if you could refresh me with the question, I could pick up my thought.

Q. - What assurance can you give the Board that unknown degradation mechanisms will not occur in a refurbished Point Lepreau.

A. Okay. I'm sorry. The other thing that I wanted to point to was the extensive condition assessments that were done in Phase 1 of the refurbishment project, that that in fact was a review of the health of all of the systems and components at the plant, and that in itself has provided us with material for setting up improved system health monitoring programs for the plant, equipment and components, but it has also given us the assurance that those components that we have which are not the subject of refurbishment work, are in fact fit to operate for the long term of the plant post refurbishment.

MR. WHITE: I would give you some added comments on that. In I think about 1997 we took out a full membership in the World Association of Nuclear Operators, and if I back up

just a little bit, as a result of the Three Mile Island incident in 1979 the CEO's and chairmen of the utilities in the United States, nuclear utilities in the United States, recognized that nuclear plants were a special breed of generating plant. They just weren't another coal plant. They were sitting out there and they needed special kinds of attention. And they recognized the need to put in place an organization in the US that was essentially controlled by the utilities that would seek out the good performances in the industry and would take those good performances to plants that were weaker in performance and strengthen those weaker plants. So that at the end of the day, we are like a -- in the nuclear industry, we are like the links of a chain. The failure of any one of them affects all of us.

And as a result of that they put in place an organization called INPO in the US, Institute of Nuclear Power Operators, which was focused on improving the safety and quality of operating nuclear plants.

And that organization has been instrumental in bringing to bear on the industry on a peer review basis the requirements for improvements in operating plants, and they operate at the very highest levels in the industry, at the president and chairmen levels and the Board of

Directors levels, to ensure that those levels are committed to the kinds of things that are necessary to operate nuclear plants safely, reliably, and operate them very well. And if you have got that then you got an economic operating station.

And as a result of the Chernobyl incident the world nuclear community started to look and say, what is it that we need to put in place to ensure better operation of facilities on a round the world basis. And so they put in place the World Association of Nuclear Operators which is really a world organization that parallels to a great degree what happened in the US with INPO.

And today every nuclear plant in the world is a member of the World Association of Nuclear Operators and as part of that they carry out a number of programs, peer reviews, where they actually come into your station and look at it and assess how you are doing compared to their world standard.

They provide technical assistance. If you have a problem area that you think you are weak on and need some assistance they will pluck people right out of the operating nuclear industry in stations that have good programs in those particular areas and put them right on your doorstep. We don't pay for that outside of our

normal membership. And you can get extra technical advice from the other guy that's having that same operating issue and has put in place a good solution to that.

So those assistances in an ongoing basis in terms of opening us up more and being engaged in the world community of operating nuclear power plants, and the focus of the organization in terms of improving reliability and safety through communication and emulation of good practices in the nuclear industry are one of the support keys that we believe helps us to operate the plant better in the future. They have been an integral part of looking at issues that we have had in human performance and equipment performance and work practices and processes and helping us with taking on the lessons that have been learned in the US and other places in the world and applying the best practices out of those to our station. So we think that's a major asset in terms of going forward and supporting us in operating that facility.

Q. - Thank you, Mr. White. Now a question for Mr. Pilkington. At page 18 of your evidence at line 20, and that would be exhibit A-1, the evidence of Mr. Pilkington, page 18 at line 20. You state that the station's post refurbishment capacity factor is expected to be 89 percent. Is that not correct?

MR. PILKINGTON: That is correct.

Q. - Now I want you to turn to exhibit A-5, the response to PUB-9 (1) where NB Power in response to the Board's request for the Point Lepreau capacity factors from inception in 1983-84 to 2001 to 2002 are provided.

CHAIRMAN: What is the PUB number?

Q. - Exhibit A-5

CHAIRMAN: -- PUB number interrogatory.

Q. - PUB-9 (1). And we are also going to look at 9 (8). Now looking at --

CHAIRMAN: We are not there yet, MacNutt. All right. We are now. Okay.

Q. - Now Mr. Pilkington, looking at --

CHAIRMAN: That is on page 436. That would have been the easy way to get there.

Q. - Sorry about that, Mr. Chairman. Now Mr. Pilkington, looking at the response to PUB-9 (1) I am correct in my assumption that the capacity factors for Point Lepreau from inception in 1983-84 to 2001-02 are provided?

MR. PILKINGTON: Yes. That is correct.

Q. - Thank you. And that table gives you an average annual capacity factor of 83 percent. Is that correct?

MR. PILKINGTON: Yes. I believe that is actually 83.6 percent.

Q. - Okay. We are not into tenths here. From the table provided in response to PUB-9 (8) which is just further on, on that same response, we can see that the staffing level in 1990, '91 was 444 full time equivalent positions. And the staffing level for 2010, 2011 is projected to be 770 full time equivalent positions. Is that not correct?

MR. PILKINGTON: Yes. There is actually an anomaly in that information based on the way that we have described. If you look at '90, '91, 444 would represent the actual number of regular employees of NB Power at Point Lepreau. Plus any term temporary employees that we would have had.

The number for 2010 includes all of the regular employees, term temporary employees, but also includes any increment in hired services. And so there is an additional -- there is an additional category that has been lumped into that number that doesn't exist in the first one.

Unfortunately, looking at the historical data there was no way to assign specific FTE's to the hired service levels of the day. So if you -- if you took the number of 770 in 2010, 2011, that would probably -- and I am just giving you a number off the top of my head -- but that would probably relate to a number in the range of 700 in terms of regular plus temporary staff.

Q. - So to bring the two in line and using the same components for '90, '91 and in the same categories as in 2010, 2011 the two comparable numbers would be 700 approximately in '90, '91 compared to 777 in 2010, '11. Is that correct?

MR. PILKINGTON: No.

Q. - 770 in --

MR. PILKINGTON: Just a moment. Let me -- let me try and -- it would be the 444 in '90, '91 relative to approximately 700 in 2010, '11.

Q. - Okay. I am sorry, we have now got it right.

CHAIRMAN: Just to interrupt for a second. If I understand, Mr. Pilkington, you are saying -- what are these bodies that have been added to the figures in 2009, 2010?

MR. PILKINGTON: Yes. Ms. McKibbon, is going to provide some further explanations.

MS. MCKIBBON: Mr. Chairman, for purposes of the financial projection beyond the current fiscal year where additional resources were required for future operations of the plant, we did not distinguish between full time equivalence as regular employees versus contract or hired services employees, recognizing that our human resource strategy would in any given year attract those people based on what would be most economic and most reasonable at the time.

So the go forward projections would include full time equivalence which may be contracted hired services or may be full time employees. However, the historical numbers represent employees only.

CHAIRMAN: All right. Just a note for the future then for something of this nature. Would it have not been appropriate to put an asterisk where you start to do that so that those who are analyzing charts like this realize that there is something else that has been added in?

MS. MCKIBBON: Yes.

CHAIRMAN: Okay. Sorry, Mr. MacNutt, carry on.

Q. - Thank you. But I have -- just the close out on the question on this is that would you explain, looking at the larger picture taking into account the adjustment figures you just gave us, why it will take 250 more employees post refurbishment to achieve -- achieve a projected 89 percent capacity factor than the actually achieved 83 percent capacity factor for 2001 and 2002?

MR. PILKINGTON: Yes. And I would -- I would attribute that to a change in our philosophy of operating the plant, that in the early 90's I think I said in the evidence, that in fact we had precursors to deteriorating plant performance which went unrecognized. And so that in the 90's we actually reduced budgets at a time when we had an aging

plant and in fact should have been increasing staff, increasing budgets to address the long term aging problems of the plant.

We have now recognized that. And we have also recognized the fact that we need to, over the long term, maintain a skilled and trained staff level, and we need to account for staff losses, the things like retirement. And so we have additional programs in place. We have projected for succession planning in the future. And we have recognized that -- that for the long term success of the station it requires a hight level of resources. And so we have higher staffing levels now and projected into the future. And we have in fact higher operating and maintenance budgets now and projected into the future.

And the outages that we plan or that we show into the future are based less on doing corrective maintenance as problems arise and more on implementing predictive and preventative maintenance programs and in doing a level of inspection on the plant that will in fact allow us to have long term highly reliable operation.

Q. - Thank you.

CHAIRMAN: Just one follow up on that.

MR. SOLLOWS: Back on this table, to be sure that we are clear here. Where is the demarcation line where we go

from actual data to projection? And where do we start going?

MS. MCKIBBON: The last year where actuals are presented as fiscal 2001, '02. So the number is 698. And from that point forward they are projected numbers.

CHAIRMAN: Again. Does the 698 include any contracting?

MS. MCKIBBON: No. It doesn't, Mr. Chairman.

CHAIRMAN: Okay. Thank you.

MR. SOLLOWS: Is there some reason why we couldn't go back the seven years at least that you have records for in order to determine what the total staffing doubles are so we have some basis of comparison?

MS. MCKIBBON: Yes. We could do that.

CHAIRMAN: Okay, Mr. MacNutt. Sorry.

MR. HASHEY: Mr. Chairman, is this something that you would like us to do?

CHAIRMAN: Well I just --

MR. HASHEY: If you would, maybe we should direct the question and find out how long it would take to do something like that to see if it is practical?

CHAIRMAN: We were actually going to discuss whether we needed that or we didn't. And then get back to you on it. But go ahead. How long would it take to do that sort of analysis?

MS. MCKIBBON: Certainly Mr. Chairman, we could have it ready for the beginning of next week when the hearing reconvenes.

CHAIRMAN: We will consider over lunch whether we need that, Mr. Hashey. Thank you. Sorry, Mr. MacNutt. Go ahead.

Q. - Thank you, Mr. Chairman. A question addressed to Mr. White. I would like you to turn to the retubing agreement, which is exhibit A-13. And it is found in -- it is in response to PNB sub 9.

MR. DUMONT: Would you repeat that please?

Q. - Exhibit A-13, PNB-9.

CHAIRMAN: What part?

MR. MACNUTT: Oh, it is just to have it available. I was actually going to go on. The reference to it comes in at the end of the question, Mr. Chairman.

Q. - Now Mr. White, in your evidence at exhibit A-1 at page 9, lines 8 to 10, you state that "NB Power as a small utility with a single nuclear unit believes that a risk-sharing partnership type arrangement with the industry leader is the least risk strategy for the Refurbishment Project and beyond."

And then later in response to JDI-1, which is exhibit A-5, JDI-1, a description of the relationship in more detail is provided where it is stated "The nature of the

relationship is best described in the memorandum of agreement provided in response to NB Power PUB-8. It is not a legal partnership but partnering a relationship. The partnering approach is integral to the overall contract structure, including the firm price commitments and the post refurbishment risk-sharing. NB Power believes that these elements benefit the Refurbishment Project, capital cost and operating performance."

Now is it fair to say that this partnering relationship is not in the form of a written agreement, but finds its form in the structure of the contract documents and working relationship between AECL and NB Power?

MR. WHITE: Yes. It is in the four documents.

Q. - Now where in the Retubing Agreement, Refurbishment Agreement or Plant Performance Agreement is this expressly reflected?

MR. WHITE: I believe it is in the Plant Performance Agreement.

Q. - And would you direct us to where that is?

Now the Plant Performance Agreement for reference is in exhibit A-17. So I guess I have pointed you in the wrong direction at the opening of the question.

MR. WHITE: I will have to do some searching here. Because

my memory says that --

MR. HASHEY: Maybe we could help.

MR. WHITE: -- there is a clause here --

MR. HASHEY: In reference to 8.3, possibly to save some time.

MR. WHITE: 8.3? 8.3 of article 8 on page 16 states that "It is understood that it is not the intention of the parties to create a partnership or joint venture. The duties, obligations and liabilities of the parties are intended to be separate and not joint or collective. And nothing in this agreement shall be construed to create a partnership or impose a partnership duty."

Q. - That is a pretty standard phrase from a construction contract to indicate that there is no partnership, isn't it? That is a boilerplate provision usually found in such a contract?

What I'm looking --

MR. WHITE: It probably is, but --

Q. - What I'm looking for here is some evidence in writing of the express relationship, which expresses the relationship between NB Power and AECL which embodies this description you gave in JDI-1.

This sort of a partnership arrangement, but it is not a formal partnership. Has that been converted to writing

anywheres?

MR. WHITE: Well, I believe in the evidence we have submitted, the memorandums of understanding, and that embodied the basic elements that we wanted to put together four agreements here, that we wanted participation from AECL in terms of warranting performance, and that they wanted to be -- have the exclusive rights to carry out a volume of work, including the retubing, refurbishment and providing technical services on an ongoing basis.

Q. - Okay. So what you are telling me, just to clarify, that from the outset it was not NB Power's intention to have a strict owner/contractor relationship with AECL on this project?

MR. WHITE: That is correct.

Q. - Which brings me to my next question --

MR. WHITE: I think to further explain that, it is in page 3 of the Plant Performance Agreement that says that --

MR. MACNUTT: That is in A-17, Mr. Chairman.

MR. WHITE: -- whereas NB Power and AECL entered into two memorandums of agreement dated December 21st 2000 to establish a business relationship for the refurbishment and subsequent operation of Point Lepreau, and specifically to negotiate in good faith four agreements for such purposes, this agreement being one of them.

MR. HASHEY: Mr. Chairman, it might help, I think, is the legal partnership sense. And I don't think there is any intention to suggest that that exists. It didn't. But I think it is in the business sense that these witnesses would be speaking of.

And I think that is where maybe lawyers might interpret something a little different than certainly a project manager or vice-president, as Mr. White would be. That would really be what we are saying here.

Q. - Would you agree with what Mr. Hashey has just expressed, Mr. White?

MR. WHITE: I believe I do.

MR. HASHEY: I will stay out of it.

MR. MACNUTT: Thank you.

Q. - In the refurbishment documents, you are to be the engineer for the purposes of the contract, is that correct, at least on a nominal basis?

MR. WHITE: That is correct.

Q. - And that is -- now other than AECL, what outside engineering expertise have you retained to assist you as the engineer, fulfilling the role of engineer under the contract?

MR. WHITE: Well, as part of the original assessments we engaged a number of outside parties. And they are all

detailed in the document here in terms of participation in what would be a valid process for reviewing the condition of the station and verifying that that valid process was actually carried out, for identifying a valid process for looking at the safety and licencing aspects of the interface with the regulator and what would be a valid process there in verifying that that valid process was in fact carried out.

And we also engaged an advisory committee reporting to the President, one of the principals being Allan Madian who was the principal author of the Hagler Bailly study back in 1998, to review the processes and methodologies that we have used and the results that we came and the conclusions that we reached again as being appropriate and valid for the work to be undertaken.

We still have that advisory committee on an ongoing basis. Although one of the members who was also involved in the Hagler Bailly study unfortunately was killed in a climbing accident.

So we have retained that advisory committee on an ongoing basis at this point in time to advise us on the next phases of the refurbishment, to oversight the process that we are carrying out, to provide independent verification to our President that they think the process

is whole and healthy and that the requirements that we have laid down in our contracts are in fact the requirements that we are succeeding on.

Q. - Yes. That advisory committee -- and I will just touch on it before I go on with my previous line of questioning. There are AECL personnel on that committee?

MR. WHITE: I beg your pardon?

Q. - There are AECL personnel on that committee?

MR. WHITE: No.

Q. - Does that committee have a decision making authority? Or does the decision making always remain with NB Power?

MR. WHITE: It remains with NB Power.

Q. - So it is an advisory role only -

MR. WHITE: Yes.

Q. - -- for this advisory committee?

MR. WHITE: It is an oversight of the processes that we are carrying out.

Q. - Yes. Now are you familiar with the Moncton-Fredericton Highway Project and Confederation Bridge Project where there was independent engineer used in those construction management and construction documents?

MR. WHITE: I don't know the specific structures that they used.

Q. - Were you aware of the concept of independent engineer and

the role the independent engineer played in those two projects?

MR. WHITE: No, not in detail. I understand the concept. But I'm not aware of any details on those.

Q. - Well, it is my understanding, and we will see if we agree on it, that the independent engineer is an engineering firm who is retained to act totally independent of the owner and the contractor to bring professional judgment to whether or not the project can be built within the design and budget and to independently verify that work is being done and to issue the progress payment approvals as the work is being done from time to time during the course of the contract.

Would your understanding agree somewhat with that?

MR. WHITE: Yes. I understand that concept.

Q. - Yes.

MR. HASHEY: Be very careful. I'm prepared to debate with Mr. MacNutt what happened on that project. But he has made a lengthy statement there about the use and what this advisory group did. I happen to have knowledge I probably can't deal with.

But I think we got to be pretty careful with the comparison unless evidence is led here about it.

CHAIRMAN: Well, let's see what the question is.

MR. HASHEY: Yes. Well, no. It refers to his last question, Mr. Chairman.

Q. - The question is much milder than Mr. Hashey anticipated. What consideration did NB Power give to using an independent -- the concept of, and applying the concept of the independent engineer to provide that independent engineering oversight in the proposed project?

MR. WHITE: Well, we recognized on the front end of this project that if we did the assessment ourselves then we would be open to that question of how good is your assessment and how valid is it?

And we looked at what model we have seen in our industry at least in terms of doing that. And you can see in our utility to the west of us that they went through several of those reviews trying to come to grips with what the numbers and costs and elements of this project might be.

And it was our conclusion at the end of the time, based on again the methodology of looking for risk partners and risk-mitigating arrangements with somebody being involved for the longer term on it, that our best approach on that was in fact to get an arrangement with AECL and our original designer they would be technically competent to properly assess the condition of the plant,

being the original designer, and they are also quite prepared that if they were involved in that process to give us a firm price on the job.

And we believe that these projects, as I think has been related in this hearing, do have risks in them and they do have risks of project extensions and scope changes and understandings of scope and schedules and everything else.

That if we could nail those down as tight as we could into firm price contracts, that that would maybe give us the best advantage and the best protection going forward on these kinds of things.

So we did engage AECL to project-manage the assessment phase so that they would be intimately knowledgeable of the condition of the plant. So when they in fact gave us a firm price they did it on the basis of solid knowledge.

And that is one of the difficulties of trying to do either extensions to the existing life or refurbishment or bringing plants back on line.

If you get an independent group doing the assessment of plant condition, then you send that out in a tender spec, and you ask somebody else to bid on it, do they have a proper understanding of what really is the condition of the facility and the scope of work that they are actually

going to have to undertake?

And in most cases you find that there are gaps in the knowledge of that. And therefore they are not able to give a proper bid on that or they won't firm the bid up or they will put a lot of qualification in the bid until they have been in there and seen it and done assessments and a whole lot of things. And they can't be solid on the price.

And so we thought the best strategy was in fact get them involved from day one, that they looked like, from our survey, our work in the industry, to be the right partner to enter into with this piece of work, and that when they gave us a price they would give us a price on a full knowledge basis and that they would commit that they had -- that price was based on a full knowledge basis of the assessment of the station. So we thought that gave us the best assurance.

Now having done that, then we engaged the external services of this advisory team which includes Mr. Madian who -- from the Hagler Bailly study, spent the best part of nine or 10 months assessing the condition of the plant in some considerable detail at that time, not as heavy as AECL did, but in some considerable detail at that time.

So he came from a knowledgeable point of understanding

of the plant condition and what would be needed in refurbishment to oversight and review the process that we carried out in conjunction with AECL. And we also engaged John Sommerville, who today is the President of COG. He was the manager of startup for the Romanian reactor. And he was also a station manager of Point Lepreau in past days and director of the operation of that station for NB Power.

And again he has both intimate knowledge of this station and he has knowledge of the startup and the operation of other CANDU stations and of the licencing process. So he can provide expert independent engineering advice on the veracity of the processes and the estimates that we have come up with.

MR. MACNUTT: Thank you. Just a several relatively short questions for Ms. McKibbon and we will be through, Mr. Chairman.

CHAIRMAN: Thank you, Mr. MacNutt.

Q. - You are a chartered accountant, Ms. McKibbon?

MS. MCKIBBON: Yes, I am.

Q. - Now do you remember when Mr. Gillis asked you to define "contributed surplus"?

MS. MCKIBBON: Yes, I do.

Q. - And it is my understanding from the transcript at page

671, that is the transcript of June 3, 2002, you said it is the accumulated net earnings net of any dividends that a corporation would have accumulated over its operations.

Do you still stand by that?

MS. MCKIBBON: I will attribute to nerves that I gave him the definition for retained earnings instead of contributed surplus, sir.

Q. - Thank you. Could you give us the correct definition?

MS. MCKIBBON: Typically contributed surplus would be the amount of capital above the par value of shares which a corporation has been able to get for the sale of those shares.

And there may be other adjustments made to that as shares are redeemed in the future, if they are redeemed for less than their par value.

Q. - Okay. Now I would like you to turn to exhibit A-1 of evidence, your evidence, page 1. It is a single page, exhibit A-1, Ms. McKibbon's evidence, a single page.

MR. MACNUTT: I will be referring to what is written, Mr. Chairman. Not really needed to turn to it.

Q. - Now Ms. McKibbon, in the first paragraph you state that your position is Business Manager, is that correct?

MS. MCKIBBON: Yes. That is correct.

Q. - Now in response to a question by Saint John Energy

yesterday, or perhaps it will be the day before now, you described your responsibility as Business Manager and stated that your duties included business planning and preparation of projections for Point Lepreau, is that correct?

MS. MCKIBBON: Yes.

Q. - Now are you aware that in the Coleson Cove evidence presented by NB Power that NB Power provided a calculation of an estimated payback period for the investment in the Coleson Cove Refurbishment Project?

MS. MCKIBBON: No. I was not aware of the evidence of Coleson Cove.

Q. - Would you accept for the moment that it in fact was done in that project?

MS. MCKIBBON: Yes.

Q. - Thank you. Now as a Business Manager do you consider the determination of an estimated payback period a useful tool for management in making investment decisions?

MS. MCKIBBON: I do, Mr. MacNutt. However within the accountabilities of may job, I'm not accountable for the investment decision making per se for NB Power relative to Point Lepreau.

I'm in fact responsible for certain inputs to that decision making, which were the operating projections.

MR. HASHEY: Ms. MacFarlane of course on Panel B would be here for that area of evidence.

Q. - So in fact with respect to the Point Lepreau Refurbishment Project you have not prepared a payback estimate or projected a payback period?

CHAIRMAN: Mr. MacNutt, you were talking to Mr. Easson at the time. But the panel has indicated that that is a Panel B question.

MR. MACNUTT: I would still like Ms. McKibbon to answer this question, if you don't mind, Mr. Chairman. And if she says no that is the end of it.

CHAIRMAN: All right. Go ahead.

MS. MCKIBBON: No, sir. That would have been the purview of Panel B to do that type of calculation.

Q. - And you in fact did not do one yourself?

MS. MCKIBBON: No, I did not.

Q. - Now in your direct evidence we just referred to, you state that you were involved in cash flow projections for the operations of Point Lepreau for the period up to the refurbishment stage and for the extended operating life of the station following refurbishment, is that correct?

MS. MCKIBBON: Yes. That is correct.

Q. - Now is it correct to say that the overall cash flow projections included in the evidence of Ms. MacFarlane

were not prepared by you?

MS. MCKIBBON: The information which I prepared was provided to Ms. MacFarlane as an input to the analysis. But I did not prepare all of those numbers, no.

Q. - Now does this mean that you have prepared separate cash flow projections for the Point Lepreau Nuclear Station?

MS. MCKIBBON: I was responsible for the preparation of the operations and maintenance cash flow projections and the plant capital cash flow projections, those that were included in Mr. Pilkington's evidence.

Q. - And what is the purpose of those cash flow projections?

MS. MCKIBBON: Well the economic analysis required to make the decision by the corporation between refurbishing Point Lepreau or an alternative scenario would have required projections to end of life for the operation of either alterative. So in my situation I was responsible for those pieces required to run the plant once refurbished through to end of life so that they could be compared to the 25 year projections of an alternative such as the natural gas alternative.

Q. - Does each generating station have a business manager who prepares the same kind of cash flow statements as you do?

MS. MCKIBBON: The model varies from business unit to business unit within the corporation. So my knowledge of

the conventional generation side is that my counterpart in that area would have been responsible for any types of longterm projections prepared and would be assisted by individuals working in the various plants.

Q. - Now do you have the cash flow projections for Point Lepreau you just referred to with you?

MS. MCKIBBON: They are contained in Mr. Pilkington's evidence.

Q. - And could you just point --

MS. MCKIBBON: Certainly.

Q. - Would you point us to them?

MS. MCKIBBON: There are two tables in the evidence which would include that information. Table number 1 would include the capital projections.

Q. - Perhaps if we could just slow down. I believe you are referring to exhibit A-1 where Mr. Pilkington --

MS. MCKIBBON: I apologize. Yes. Exhibit A-1, Mr. Pilkington's evidence.

Q. - And could you give us the page reference where you are referring to?

MS. MCKIBBON: Yes. Table number 1 is on page 7 and table number 2 is on page 21.

Q. - Can you just tell us why they are not described as cash flow projections?

MS. MCKIBBON: They are described as projected costs for both areas and I -- I guess we believed that accurately described what they are.

MR. MACNUTT: Okay. No further questions, Mr. Chairman.

CHAIRMAN: Thank you, Mr. MacNutt. Just before we break for lunch, Mr. Hyslop has indicated to me that in the in-camera hearing he probably has upwards of an hour and a half. Is that correct, Mr. Hyslop?

MR. HYSLOP: I would anticipate an hour and a half, two hours, Mr. Chairman, yes.

CHAIRMAN: Okay. And of the other parties that are able to take part, who anticipates having questions? Mr. Craik. And how long do you anticipate your questions would take, sir?

MR. CRAIK: Less than an hour.

CHAIRMAN: Less than an hour. I think that cinches it. We will -- you can tell Panel B that it will be Monday before they will have to take the stand.

MR. HASHEY: Thank you. I was going to make that suggestion, Mr. Chairman. Thank you.

CHAIRMAN: So we will break now and come back at 1:30 -- sorry, Mr. Hyslop.

MR. HYSLOP: Before we close off the evidence with regard Panel A before going in-camera, you might --

CHAIRMAN: The Board Panel itself has a few questions, we will do it after lunch. I just point that out, you can tell me what you want to know. If this is an appropriate time, go ahead.

MR. HYSLOP: Sure. You might recall yesterday we had a document that was put into -- referred to by identification. We have cleaned some of the glitches out of that. I would move to have the opportunity to try again with respect to that document and get it to the exhibit stage if possible.

CHAIRMAN: Would you like to do that right now since it is -- it's quarter after.

MR. HYSLOP: Sure. It shouldn't take hopefully more than a few minutes.

CHAIRMAN: Mr. MacNutt will give up his prime spot there for you, I'm sure.

MR. MACNUTT: Absolutely.

CHAIRMAN: This you are anticipating will replace marked for identification number 5. Go ahead, Mr. Hyslop.

MR. HYSLOP: Yes, Mr. Chairman. I present a document I would suggest be in replacement of the document marked yesterday for identification as number 5, and I have just a few questions for the Panel and -- perhaps the Panel might indicate who wishes to handle the questions with

respect to this.

MR. WHITE: We will do our best to answer them, whatever the question is.

CROSS-EXAMINATION BY MR. HYSLOP:

Q. - Okay. Thank you, Mr. White. This is a calculation, Panel, many of the assumptions we went through yesterday and none of those have changed. And at that time you indicated the assumptions at the bottom reflected the terms of the performance agreement. Our suggestion is that had this performance agreement been put into place in 1983 for the original Point Lepreau, the following results would have occurred. After 25 years NB Power would have made total payments to AECL of $5.9 million. Would you accept that and the calculations to be correct?

MR. WHITE: That's what you show on your sheet.

Q. - Yes. And would you accept them to be mathematically correct, Mr. White, on the assumption this contract had gone into place in 1983?

MR. WHITE: I have assumed you checked your numbers this time and had them validated.

Q. - Thank you very much. And with respect to payments that would have been made by NB Power as a result of the performance of the plant to the end of 2008, our calculation is the payments for replacement power for 80

percent capacity would have netted at 216 million. Would you accept those calculations as being correct?

MR. WHITE: I assume you have validated this time.

Q. - And would you accept that as such, Mr. White?

MR. WHITE: I don't have any reason to object to it.

Q. - Thank you. And on the further assumption that had the performance agreement been for the full life of Point Lepreau, as anticipated in 1983, of 30 years, we have made the following calculations which I would ask you to indicate whether you accept as being correct. And the first of those would be that AECL would have repaid to NB Power additional monies over the last five years and net over the 30 years would be $118.6 million. Would you accept those calculations, Mr. White?

MR. WHITE: I understand your calculations.

Q. - Thank you. And with respect to the total payments NB Power would have had to make if the performance agreement in 1983 had been on a 30 year period, those payments would be $1,016,000,000. Would that be correct, Mr. White.

MR. WHITE: I understand the basis for your calculation.

MR. HYSLOP: Yes. Okay. Thank you very much. On that basis, Mr. Chairman, we would move that the document marked identified as number 5 be put in place as an exhibit and marked PNB-1.

CHAIRMAN: I think what we have to do is marked for identification 5 still stands.

MR. HYSLOP: Yes.

CHAIRMAN: That's the one that had the mathematical errors on it. You have produced a sheet that the witnesses have been looking at and that's what you want to have put in as an exhibit.

MR. HYSLOP: Yes.

CHAIRMAN: Mr. Hashey, do you have any objections?

MR. HASHEY: Yes.

CHAIRMAN: Well could you --

MR. HASHEY: I don't believe that these witnesses have agreed with the methodology used in this matter, as they have so clearly stated in their evidence, and as such it really shouldn't be put in as an exhibit which to me is something that demonstrates accuracy.

Now if there can be some discussion about how that is to be entered or the condition of entry, I wouldn't have a problem.

CHAIRMAN: Yes. Well frankly, Mr. Hashey, my inclination -- and I haven't spoken to my fellow Commissioners about this -- is in fact to put it in evidence and give it the weight that it deserves, which is a typical administrative Board reaction to something like this, so that you gentlemen can

cover its true value in argument or -- frankly, Mr. Hashey, if you want to in rebuttal with the panel have them point out to us, and at least then it's on the table and we go from there.

Any problem with it being put in on that basis?

MR. HASHEY: No.

CHAIRMAN: No. Anybody else? All right. We will accept it as an exhibit and give it the weight that it deserves. And it will be PNB-1.

MR. HYSLOP: Might I have time just to reflect on Mr. Hashey's document over lunch and reserve the right to perhaps ask a few more questions on this document, Mr. Nicholson, after lunch?

CHAIRMAN: Sorry. Which document?

MR. HYSLOP: What is now PNB-1.

CHAIRMAN: Okay. I thought it was your document?

MR. HYSLOP: Yes, it is.

CHAIRMAN: Yes. I'm sorry. You said Mr. Hashey's document --

MR. HYSLOP: No, no.

CHAIRMAN: -- or maybe I need lunch.

MR. HYSLOP: No. I indicated that in view of Mr. Hashey's comments if -- I thought the document spoke for something pretty obvious and I agree there is an issue of weight.

But his question as to the assumptions and the calculations, I may want to firm those up by further cross-examination on this document now that it's an exhibit, after lunch. I just want to reflect on that and think about it if I might.

CHAIRMAN: Certainly. I have no problem with that. Any other matters you want to cover before lunch?

MR. HYSLOP: No, that would be all, Mr. Chairman.

CHAIRMAN: All right. We will break for lunch and try to get back here at half past one.

(Recess - 12:30 p.m. - 1:30 p.m.)

CHAIRMAN: Did you have a good lunch, Mr. Hyslop? Have you decided what you are going to do?

MR. HYSLOP: Mr. Hashey and I are pretty well in agreement but I think -- we will make a joint statement at some point in time as to the effect of that document, Mr. Chairman. I think that's the way Mr. Hashey and I left it.

MR. HASHEY: We will try to work out something and state what our position on it and Mr. Hyslop's position as to what it means. And we do need some time but we don't want to hold up the hearing.

CHAIRMAN: No, that's fine. Frankly I think it's something for argument anyway.

MR. HASHEY: More or less, right on.

CHAIRMAN: Okay.

MR. HASHEY: Mr. Chairman, could I ask for one issue that I would like to clarify?

CHAIRMAN: Yes.

MR. HASHEY: Believe it or not our people read transcripts. There is one transcript, at page 714 in the June 3rd transcript, which is Mr. White's evidence, that we believe it was either misstated by Mr. White or --

CHAIRMAN: Sure. Go ahead.

MR. HASHEY: -- misquoted. I do tell you that I want to put on record that the work of the court reporters is unbelievably good, as we know from the reputation of Mr. Henneberry's company and the good people that work there.

CHAIRMAN: It's those people back at the office that really make the difference, Mr. Hashey.

MR. HASHEY: It's -- having a little experience in that area at my own house I know how hard that work really is to accomplish what they are doing. It has been a great, great assistance to us in preparing witnesses, in trying to identify areas that are referenced off to another Panel. It's been very, very helpful.

But there is only one little area that we think that it should be corrected. It was in the cross-examination

by Mr. Gillis and Mr. White could do it in a second.

CHAIRMAN: Go ahead, Mr. White.

MR. WHITE: On page 714 of the June 3rd transcripts, on line 22, I am responding to a question from Mr. Gillis where he had asked what is the total value of payment. And the record shows 50 grand or the value of the contract. And then he asked the question on the next line, not 50 percent. I think the answer that I hoped I had given was, 50 percent of the value of the contract.

CHAIRMAN: Well 50 grand doesn't sound like you, Mr. White.

MR. WHITE: No, it doesn't, does it.

CHAIRMAN: So that's the correction.

MR. HASHEY: That's it. That's all.

CHAIRMAN: Good. Thank you, Mr. Hashey.

BY THE BOARD:

MR. DUMONT: Good afternoon, Panel. I have a question concerning exhibit A-16, slide 59. And the last bullet is a corrosion resistant material for feeders. I would like to know what is the difference in the material that is going to be used in the refurbishment and what there is there now, the material of the feeders?

MR. EAGLES: The material of the feeders in service today is a carbon steel pipe. The exact specification number I can't quote off the top of my head. The proposal is to

install an upgraded or improved material with some chromium content and thereby improving the corrosion resistance. And this would then mitigate the issue of feeder thinning that we have been experiencing.

MR. DUMONT: Has this material been tested elsewhere in other reactors?

MR. WHITE: Let me help a little bit with that. I think the spec is A-106, carbon steel pipe. And when you specify carbon steel pipe you can get a range of chrome contents from zero up to .4 or .5 percent, something like that, and maybe slightly higher than that. So that's the normal specification for carbon steel pipe.

In this case we have recognized through research and whatever that having a slightly improved chrome content can mitigate this corrosion/erosion phenomena that we have.

And so we specify the lower level of chrome content and the lower level is around .4 percent. So instead of it as a factory run being able to be all the way down to zero we specify a minimum level of chrome content and that's what improves it.

So it's still a standard spec but it has a minimum level on chrome content.

MR. DUMONT: And I am aware that in the original design

there was problems with the bends of those feeders, the geometry of the bends. Has this been -- is there a new design for the new refurbishment or is it the same geometry of the bends on the feeder bends?

MR. WHITE: The geometry of the bends is the same in terms of the amount of bend on it. The ones in a current reactor in Lepreau were not stress relieved after they were bending and current practice is to have stress relieved bends on those things.

MR. DUMONT: Thank you. I might have something else here. There was an incident in -- I can't remember the exact year, but about the border internal piping eroded?

MR. WHITE: Yes.

MR. DUMONT: Mr. Pilkington mentioned that?

MR. WHITE: 1986 --

MR. DUMONT: Was that due to --

MR. WHITE: -- or '96, sorry.

MR. DUMONT: Yes. Was that due to poor water quality because of that erosion?

MR. WHITE: No, I don't think so. Piping in a nuclear facility can get eroded because of either the materials or the components of steam water mixes, and we had recognized that in piping in the power plant and put a program in place to start -- to looking at the susceptible areas

within the power plant that that kind of thing could happen. And we had done a number of examinations of external piping in the power plant up to the vessels, but in the case of the boiler we hadn't actually gone into the internals of the boiler looking for that kind of a phenomenon.

Is there anything else Mr. Pilkington may want to add to that?

MR. PILKINGTON: Well that pretty well covers it. It's just the piping that had the problem was internal to the boiler and it was carrying saturated water back to the boiler that did not have any chemical treatment. And so that piping was, because of the flow velocities and the nature of the fluid, was subject to erosion/corrosion. And as Mr. White said, because it was internal to the vessel it had not been considered in the erosion/corrosion program scope up to that time.

MR. DUMONT: So your answer is yes, it was due to the water, the erosion?

MR. PILKINGTON: Water or whether it's -- in that area whether there is two phase flow, I'm not sure, but essentially water erosion, yes.

MR. DUMONT: Thank you.

MR. WHITE: You are into an area in the boiler where you

have vigorous boiling going on in there. So you have a mix of water and steam mixture in a very agitated form.

MR. DUMONT: Yes. Okay. Thank you.

MR. SOLLOWS: I guess I just have one question and I would like to address it to the whole panel and you might want to take a few minutes to confer and maybe each bring your own perspective to it.

And I guess where I'm going is based on the presentation we have seen so far, I'm sort of anticipating what maybe some of the arguments might be.

And I would like your individual and collective assessment of what would be the pros and cons from a technical perspective, not so much a financial economic perspective -- because that's a later Panel and we will deal with that then -- the pros and cons from a technical perspective of taking the plant to an orderly shut down at some point, 2006, 2007, 2008, leaving it shut down for a period of time and then doing the refurbishment or whatever is necessary, and/or using the balance of plant, steam turbine and balance of plant, as part of a natural gas combined cycle unit? What would -- and I'm not interested in an overall economic evaluation, just the technical considerations that arise when you think about

it.

MR. WHITE: May I take first shot at that? One of the first considerations if you were thinking about shutting this plant down for an undefined length of time, that has a fairly close parallel to what has happened in Pickering and in Bruce, and in those cases they have a modified operating licence for those circumstances, because the plant is now in an alternate condition, neither de-fuelled or fuelled but not operating or whatever. And so in that case the regulator modified the operating licence for them.

And then when the need is to return the plant to service again you need to modify that operating licence and the modification of that operating licence would first off trigger this requirement for -- under CEAA for an environmental assessment on the whole of the station.

And those things open up all kinds of unanswered questions but -- and it's not quite fair to compare with Pickering because in their case they never had an environmental assessment but in our case we have had two. But the CNSC would certainly have an opportunity to decide what it is that they think would be appropriate in their regulatory environment going forward.

So you put yourself into much more of a period of

uncertainty there.

The second thing is that of course you have to take a position around how you are going to deal with the plant under those kind of circumstances. In our circumstances subsequent to the Hagler Bailly report, they said to us quite clearly if you want to consider the opportunity to refurbish this plant in the future, then you need to keep it in the shape that it in fact can be refurbished. In other words, you need to invest in the equipment condition of the plant to ensure that it's in a proper state at the time you want to make the decision so that the decision is still a viable one. You let it deteriorate it may not be.

Beyond that Hagler Bailly also said to us that you need to demonstrate that you can run the plant well, because in '96 and '97 we certainly went through a period where our operation was weaker than appropriate.

And they said to have confidence in refurbishing a plant then you need to have already demonstrated that you can return this plant to good stable operation and that you can predict a healthy operating environment for the future. And Mr. Pilkington has spoken to that.

If you shut down the plant for a period of time you go into that high period of uncertainty with all of your people and your people go into this different phase of

operating where they are not challenged every day by the running of the plant, they are not challenged by the operational issues that are there, they are not turning out their product in the way that they need to turn it out.

And you go into this malaise stage and complaisant stage and it's difficult to bring people back out of that stage. And we see that in reactors that are trying to go through that kind of thing, getting the people back engaged so you can actually produce the product that you want to produce.

It's difficult enough in an operating nuclear plant to do work because of the inherent layering of safety and verification, double verifications. So it's challenging to get physical work done in the first place. And the reason those layers of verification are in there is to make sure that you don't create errors and events in the plants.

But the opposite side of that is it means it's very difficult to do work. And so when you go into an extended lay-up phase your people go into more of malaise and it's more difficult to bring them back out of that stage.

The next item is licenced personnel and being able to maintain the licences you need. The ability to hold the

licences to a great degree is a function of the continued operation of the station where the skills are exercised on an ongoing basis. And we have classified this outage as a maintenance outage and with the -- we recognize the need to apply additional training to our operating personnel on top of the rigorous processes they already have, utilizing our simulators to high levels.

But we still may have to send our people to other operating plants just to be able to maintain their skill level so that the regulator is satisfied that we have it.

In the case of Ontario and in the case of Bruce, they have other operating reactors on that site and therefore they are able to put their people over into those kinds of things and maintain the licences. We only have the single unit and so it's much more difficult to maintain it. And even if we send our people to other operating plants because they are not in the specific plant you can still be challenged by, well are they actually getting all of the operating experiences that they really need to do those kinds of things.

I think that's a big issue when you move forward. You move into a much larger period of uncertainty with the regulatory and training environment that challenges you in a different way.

Of course when you lay up the plant you have to deal with the chemistries properly and lay the plant up properly so that in fact you can return it appropriately. Should you take the fuel out, shouldn't you take the fuel out? Again that's dependent on -- it's quite a long process and it costs more money to put fresh fuel in. It has some advantages because you can do things easier around the plant without that environment, but it also has disadvantages in terms of recommissioning the plant with new fuels, and those are parts of the evidence that we already have about recommissioning the plant and the extent that we may have to go because we have fresh charges and new fuel in the thing.

So that's some early thoughts on the issues that come to mind.

MR. PILKINGTON: If I can add a bit to that. That part of the question, the question on laying up the existing plant for a period of time, that really is best directed to operating personnel.

And I agree entirely with the things that Rod said. The one area that maybe he didn't stress enough is in the impact on the current people that are employed at the plant. You are in a difficult situation -- and I guess it depends on the duration of lay-up -- if you can in fact

maintain the current staff then of course you are subject to maintaining the kind of operating cost that's actually fairly similar to operating the plant while it's laid up because the majority of our cost is labour.

But if you are laying up for any period of time then it wouldn't make sense to maintain the station fully staffed.

And then the problem that you have got beyond simply -- well not simply -- beyond the very big problem of authorized staff, is the majority of the people that work at the plant. If you have to restaff the plant where we don't have any other units to call upon to get people, then it's a very difficult situation.

When the plant was first constructed we drew on people with experience in the industry as a part of that staff and then we also took people from within NB Power who were not in nuclear generation of course, because there wasn't one, and hired other people from within New Brunswick. Well during the years that the plant construction is completed and the plant is commissioned, these people have an opportunity to learn the plant design, learn the jobs and evolve with them. So that when the plant starts up they have a certain level of training and experience.

To bring a plant back from lay-up after a period of

time if you have to do a heavy restaffing then it would be extremely difficult to give people the level of training, especially the hands-on training that would put them in a position to be effective in operating and maintaining the plant when you start it back up.

So with a single unit station I would see that as a very large challenge.

MR. WHITE: I just want to add a couple of other issues there. We have already talked about the risk to operating staff. And if you lay a plan up and you don't know whether it is going to be brought on line again, nobody is interested in spending five or six or seven years in training programs to get licenced where they don't know if they got a job out there at the end of the day. It is just too painful a process to go through that. So I don't think that would happen.

Also in the US, you know, a number of plants there have had to shut down for regulatory issues or whatever over time. And in my discussions with counterparts on those things, they quite clearly tell you that it is an extremely painful process. Because everything comes on the table again at that point in time, you know.

The regulator has the eye on everything that they ever dreamed they wanted to do, and get it done before you ever

get started up again. So you get big long lists of conditions of restarting the plant, which is the reason why we portrayed to the regulator that this is a maintenance shutdown. And therefore it is not an opportunity to add a whole lot of other things to the operating licence. That is part of the normal operating licence process.

The other thing they tell you is that you will spend $200 million if you are lucky before you can get that plant restarted again.

MR. PILKINGTON: I guess you did have a second part to that question, which was the potential to essentially decommission the nuclear side of the plant and then to use the balance of plant --

MR. SOLLOWS: With some other technology or a different -- either CANDU or other nuclear steam supply system or combined cycle natural gas -- using the balance of plant in some other way.

MR. PILKINGTON: Yes. And I don't really feel qualified to comment on that to any great degree. Replacing the nuclear steam supply with another nuclear supply would I think be problematic because of the physical layout of the existing plant and the fact that it would be sitting for a long period of time essentially dormant and therefore

taking up the available space.

In terms of something that was much smaller physically, like combined cycle gas, I would think the size of the existing unit would be a problem. Because I don't know what percent comes off the steam cycle of a combined cycle plant.

But with a unit that is rated at 680 megawatts from low-pressure steam, I would envisage a forest of gas turbines feeding it, so -- but I really can't comment technically on that.

MR. WHITE: There have been situations where nuclear plants were partly completed, I believe. I don't -- I can't quote them specifically to you. But for whatever reason the corporation decided not to complete those. And they have been turned into a conventional power plant. So I think feasibility is there.

If you look at the efficiency of a nuclear plant, our efficiency is around 10 1/2 thousand BTU's per kilowatt hour which is relatively high. But you are burning or using an extremely cheap fuel here in nuclear fuel.

If you start trying to use those kinds of heat rates with oil and natural gas and whatever, those mean that you have a very expensive plant on the back end. And therefore the product is an expensive plant product that

is coming out of it, relatively speaking.

MR. DUMONT: I'm thinking about personnel retention. Is there some kind of incentive for employees, after they are licenced operators, kind of incentives they have to stay.

I know you mentioned that when you are licenced to operate Point Lepreau, if you want to go to another plant, you still have to requalify to run that plant, is that correct?

But what are incentives to stay at Lepreau after your licence? Do you have incentives to keep -- besides the salary and --

MR. WHITE: Well, if you do a comparison -- let me reference I guess comparison to nuclear market and to the New Brunswick market as well.

If we are looking at licenced personnel operating within New Brunswick market, these are extremely well-paid jobs, you know. These are highly-paid people. They certainly earn it by the arduous process they have to go through in licencing and the continuous process they have to go through every year to do that. But relative to any other jobs, these are gems of a job from a remuneration point of view.

If you look at them in comparison to where they might go if they want to operate another nuclear facility, then

that is in our case typically Ontario or Quebec. And usually not Quebec because of the language issue with most of our people.

So it is usually Ontario that they would have to move to. So we don't pay a salary that is quite equal to Ontario. But we pay something that is closer to that than it would be to the regional market recognizing a little bit of differences from those kind of things.

Typically you don't usually find our licenced people going off to another licenced job in another reactor though. What you usually find is that there are consulting jobs or offshore jobs. They might go to China for the startup, commissioning of the plant over there, go to Romania for those startups and work there.

And so essentially they can garner a consultant-type salary. And those are typically more advantageous than ours, both in terms of remuneration and the tax advantages that come off of those kinds of things. So these people are quite attracted to those kinds of things.

Generally here our people have been pretty loyal in New Brunswick. Our attrition rates historically over the plant are, you know, less than 1 1/2 percent or something like that. They are very low-numbered. And once they are employed in our facility, most people stay. And most of

our licenced people have stayed.

We have lost a few of them. Particularly we have lost some to these offshore projects where they are attracted to what is going on today in the industry.

We have had at times to make mid term adjustments because of adjustments that are going on in Ontario and Quebec with the competitors. And we talked a little bit about AECL having to make adjustments for that particular market that they are playing in as well.

But it is those kind of things that we have to look at. And we have got people that, you know, got 30, 35 years experience and are licenced people right now.

And when you look at this philosophy we have built up in our nation about retirement at 55 and whatever, you know, it is challenging to keep people past that. And sometimes you have to do some extra things to try to keep them past that until you can get the next crop of people available.

MR. DUMONT: Thank you.

CHAIRMAN: I have just one line of questioning really. And it is in Mr. Pilkington's evidence. And we referred to it a short time ago. That is in exhibit, of course, A-1, his evidence at page 3.

And it is in response to Question number 4,

Mr. Pilkington. It starts off "As station operating resources were being reduced." And I will give you a minute to come down to that.

MR. PILKINGTON: Just give us a second here.

CHAIRMAN: Yes.

MR. PILKINGTON: Sorry. Yes.

CHAIRMAN: Yes. Okay. The layman in me says your budget was being reduced. Is that a fair comment?

MR. PILKINGTON: That is correct. Again something that came up this morning, the questions on NB Power's Board of Directors and executive.

You have to understand that in those years they had a plant that had operated at better than 90 percent for 10 years. And as they began to reduce budgets and to reduce staffing, which I think was common in industry at that time, downsizing and such, in the years when they began that, there was no visible impact on the plant. Performance continued to be high.

CHAIRMAN: But I will simply ask the engineering, if you don't maintain something properly it is going to suffer. I could -- now this may seem self-serving but it is not. It also coincides '95, '96, '97.

It coincides with the fact that this Board's regulatory jurisdiction over NB Power was changed in '94,

where if you did not increase your rates greater than 3 percent across the board, you did not have to appear before the Board. If you went above that you had to. And this may or may not be related to that, the fact that your budgets were in constraint.

Now that may seem self-serving. The purpose though however is can you assure this Board that mechanisms are in place within NB Power and the owner now so that if you folks who run the nuclear facility, in your opinion, believe that it is absolutely necessary that your budget be maintained at a certain level and your employees, the number of employees be maintained at that level, that you are going to be able to do that?

MR. PILKINGTON: Let me start. And I see Rod wants to jump in. Just from my own perspective as the Station Manager, I don't believe that we would repeat the kind of situation we had before.

From my own perspective, having gone through that, I now am much more interested in operating experience from other plants, much less inward-focused. We send people to other plants in order to see how they are doing business and make sure that we stay abreast of developments in the industry.

We now look outside to have external people come in

and evaluate us from the perspective of the industry at large. And that is something that we weren't doing in the early '90's.

I think we have an executive and Board of Directors that recognize that in order to maintain the longterm viability of the asset that you do have to have programs that look at aging and that you do have to continue to invest in the future, both in the people and in the plant.

So I don't believe that we would ever allow the situation to develop where we would become isolated, as we were before, and not be looking both inside and outside for feedback on what we need to improve as we go forward.

As well I talked earlier about moving to an environment of continuous improvement. And that is one where one all of our processes and procedures and well-documented and where, rather than the informal way that we used to operate, we would have -- or we will have and are moving towards having all of our processes and procedures well-documented, so that we can maintain them up to date and continue to improve them as we go along and learn.

I think in that kind of an environment we will always demand the resources that we need to be successful. And with the experience that the company has had, I believe we will always have access to those resources.

MR. WHITE: Well, I referenced earlier to the experience in the US at the Three Mile Island and the recognition by utility executives and chairmen of the day that nuclear plants were a special kind of plant. They weren't just another power plant out there. And they needed special kinds of attention if you are going to be in that game and run them.

And I don't think there is any question that during the '90's, you know, the atmosphere in this province was one of cost containment. And that was true in our organization as well as in other organizations here.

And our voice to ask for additional funds, as Bill said, with a plant that was running very well, we had to knock pretty hard to kind of get that ear and attention in that day. And people may not want to hear it.

And I don't think we quite recognized, as we said to the regulator, what was the lifetime mission of trying to run a nuclear plant. If you are in the hardball game you can't walk way in the middle of the season. So you got to keep playing the whole time.

We at the operating plant level, as well, you know, we had diverted resources to other endeavors, because we wanted some ability to give our people some variety, so that they weren't kind of locked in the same old job and

doing the same old thing, they had some variety.

And so we were doing some things with providing services to Romania on startups and those kind of things. So we dwindled our own resources on some of those things.

We had gone through early retirement programs in the corporation at the end of the Belledune jobs in terms of -- we had been carrying a high construction staff. And so in downsizing we made that a general practice across the corporation. So we got hit with resource limitations there.

And so overall the environment of the time was one that was trying to hold the line a little bit. And we weren't aggressive enough -- although we did raise the issues, you know, we weren't aggressive enough in pursuing them. Because I don't think we had quite enough insight to say, here is what will happen to us if we keep doing that.

And one of the things that WANO has looked at very heavily and INPO in the US have looked at very heavily is what are the precursors to a plant starting to degrade and how early can you find them?

And although they have done a tremendous amount of work in this area they still see examples where plants start to degrade more than what they would have predicted.

And today at least they have a strong program of being able to find that somewhere on the degrading level before it gets way down and being able to turn it around and correct it.

And so we have the advantage of those programs, as Bill has said today, which we didn't have in the mid '90's. We were a little bit more cloistered in our own environment and thought we were doing well because everybody was coming to see us, not recognizing that the precursors were starting and that they would catch up with us.

So I think Bill has kind of covered that in a reasonable balance as to what we are doing in the plant now that helps us improve upon those things and recognize where we have to go tomorrow.

CHAIRMAN: Okay. Thank you, Mr. White.

MR. DUMONT: In '94, '95 -- '93, '94, '95 you were running at close to 94, 93 percent capacity. Well, 94, 95.

Did you have -- I'm sure there was a preventive maintenance program during those years. But I'm pretty sure it is more intensive now than it was then, is it?

MR. PILKINGTON: Absolutely. And I guess that is the point. Because we didn't look out broadly the industry in those days, we thought we had a very good preventative

maintenance program.

And when our performance started to decline and we started to look outside, it was only then that we recognized how much we fell short of really world standards or at least standards for world class performance.

Once you find you are in that situation, then it is quite expensive and difficult to get out of it. And that is why you see a number of years of reduced performance. Because until these programs are put in place, there is a risk to the reliability of the station operation. And so it takes in an operating plant a significant period of time to turn those things around.

I would point out that we have since 1995 made very significant increases in staffing in order to be able to support improvement programs. And going forward now to refurbishment and post refurbishment, we have allocated both human resources and financial resources significantly greater than we did in the initial years of the plant's operation.

CHAIRMAN: Those are all the questions of the Board.

Mr. Hashey, any redirect?

MR. HASHEY: I don't believe so. Although Mr. Chairman, I think there is one thing that was on the record this

morning that is an obvious correction.

And that is that there were statements about -- and questions were raised about Board approval for the Refurb' Project. I think really what must be obvious to the Board is what NB Power would go to the Board for, was approval to proceed with this process, which is what happened.

I hope it is not misinterpreted that there was intent by the Board to give a stamp and that this isn't meaningful. That really truly was what the process was. And I think that would be acknowledged possibly by Mr. White.

MR. WHITE: Our request in front of our Board of Directors in December was that we have authorization to proceed to the next step which is the Public Utilities Board process. And that is the authorization they gave to us only.

CHAIRMAN: I appreciate that. And I will make one comment though. I notice in your assessment of risks this Board's decision happens to be well up there on its time of delivery. I did note that.

Anything else, Mr. Hashey?

MR. HASHEY: No. Thank you.

CHAIRMAN: We will go into the in-camera session. Now I will mention to you -- and if you harken back to when the Board was making its ruling in reference to the in-camera

session, and there are other jurisdictions where we have that, if it turns out that there are matters that come out in cross-examination in the in-camera session that do not in any way affect the reasons or commercial protection of documentation, et cetera that could be put on the public record after we have finished our in-camera session, why we will certainly attempt to do that.

So we will take a 15-minute recess now. And I will mention to the translators it won't be necessary for you to continue to attend today. We will see you next Monday morning.

So we will take a 15-minute recess and reconvene with those -- sorry, Mr. Hashey?

MR. HASHEY: We have copies of the documents that were marked in confidence for the Board to follow. I think you would like to have those. And we will distribute those.

CHAIRMAN: We will take a recess, Mr. Hashey. And when we come back in there will just be those individuals who are allowed in the room at this time.

MR. HASHEY: Yes. Thank you.

CHAIRMAN: Thank you.

(Recess)

Certified to be a true transcript of the proceedings of this hearing as recorded by me, to the best of my ability.
Reporter