Page 1

October 7, 2004
(9:37 a.m.)
CHAIRMAN:
Q. Good morning. I believe, counsel, we have some preliminary matters this morning.
GREENE, Q.C.:
Q. Yes, Mr. Chair, there's two; one is the schedule for today and tomorrow and the second thing is responses to undertakings that were provided yesterday. With respect to the schedule, in speaking with counsel yesterday afternoon, there was general consensus that counsel will be prepared to sit today from 9:30 to 4:30, as well if necessary, tomorrow, and I understand from Board counsel that that issue has been put before the Panel.
CHAIRMAN:
Q. Yes, it has. I think in that regard, at least with regard to today, I wouldn't want to speak to tomorrow's schedule at least at this particular point in time, but for today, I thought that we would go till--break at 12:30 for lunch and reconvene at 1:30. We'll be taking a break this morning around 10:45 and a break this afternoon around 3:00 and that

Page 2

might be a bit flexible as well. And then go till 4:30 this afternoon. So, other than that, I believe there's some undertakings to be filed from yesterday.
GREENE, Q.C.:
Q. Thank you, Mr. Chair. What our practice has been during Capital Budget hearings and during the General Rate Application is to provide generally the following day, the responses to undertakings that we have available and then that way--for example, in this particular case, counsel for the Industrial Customers can still follow up in cross-examination if they deem that necessary with the members of the Panel. So at this particular time we are ready to respond to five of the seven undertakings that were given yesterday. And as usual, the number of undertakings and the page numbers are not necessarily the same as what's shown in the transcript, because sometimes the transcriber misses where we have--we don't use the word undertaking, but we do give a commitment to give an answer. So there are actually seven undertakings from yesterday.

Page 3

The first undertaking, and actually I should say we have a combination, I have written answers to provide to some and for two, I will ask Mr. Martin to indicate verbally what the answers are. The first undertaking was found on page 126 of the transcript yesterday. It relates to the cost benefit analysis that was provided for the Roddickton Mini Hydro dam. And the first question with respect to that was, why is the cost for operators shown in the retire plant alternative in the analysis on page 2 of the response that was provided to an information request. And the information request was IC-18. So, I have distributed to the clerk, the written response to that, which indicates that the assumption is that the Roddickton Mini Hydro will be in operation for all of 2005 as we will have to apply to the Board for approval to decommission it and also apply for environmental approval with respect to the decommissioning of the site. And for that, it's there for all of 2005 and if you look in that alternative, there is no alternative energy required from Holyrood because we're

Page 4

assuming the plant will be there for the full year. So that one has been distributed and I guess it should be marked U-Hydro No. 1.
CHAIRMAN:
Q. Very good.
GREENE, Q.C.:
Q. The second undertaking that was given yesterday was with respect to the same cost benefit analysis that was filed in response to IC-18, and it related to the explanation of the capacity number of $13,113 shown on IC-18, again, in the retire plant alternative. That has been distributed in writing which points out that the Roddickton Mini Hydro is part of the overall capacity and energy capability of the system. It is taken into account when we do the loss of load criteria for system planning purposes. If the plant is to be removed, we will have 400 less kilowatts available to meet the system requirements. So in looking at when our next source of capacity is required, it is 2011. The $13,113 is the levelized annual cost for that particular capacity which Hydro will have to provide for. In addition to meeting new forecast low growth

Page 5

GREENE, Q.C.:
in 2011, we will be short the 400 kilowatts that Roddickton does provide to us. So that answer has been distributed in writing and it should be marked U-Hydro No. 2.
CHAIRMAN:
Q. Very well. So marked.
GREENE, Q.C.:
Q. The next undertaking is found on page 134 of the transcript and it related to the budget proposal in B-103 where there was work to be done at Baie Verte, Sop's Arm and Bay D'Espoir for line depots and sheds. We were asked for the type of work that was being done with a breakdown. What we have provided in written form is a breakdown for each of the three areas. For example, you will see under Baie Verte we have a new storage shed for 29. 9 thousand. For the line depot, there is new siding, new roof, new steel door, new windows. The building is already fully depreciated and this work extends the life of that building and that's 24,000 for a total of 54,000. At Sop's Arm we have a similar situation as Baie Verte. We have the new storage shed for 16. 8

Page 6

thousand; upgrading of the line depot. Again, it's new siding, new windows, replace with a steel door, a concrete pad. The existing building is already fully depreciated and this work extends the life of the building for 19.9 or a total of 36.7 thousand for Sop's Arm. And in Baie D'Espoir there is an actual extension to an existing building for 60,000 for the total of 151,000.
The next undertaking given yesterday is found on page 148 of the transcript and it related to the criteria for light duty mobile equipment.
CHAIRMAN:
Q. What was the page number again, Ms. -
GREENE, Q.C.:
Q. 148 and it's shown there on line 21 on page 148. You really have to read above that to get the sense of what the undertaking is. We were asked to provide the criteria for light duty mobile equipment. And in this particular case, Mr. Martin is now in a position this morning to advise what our criteria is for the replacement of light duty mobile equipment. Mr. Martin, please.

Page 7

(9:45 a.m.)
MR. MARTIN:
A. Yes, thank you, Ms. Greene. As I mentioned yesterday, there are some general guidelines that we use for the light mobile equipment. For snowmobiles it's basically an age consideration. All of these are age considerations; five to seven years for snowmobiles; five to seven years for ATV's. For light trailers associated with both ski-doos or snowmobiles and ATV's, 10 to 12 years. Heavy trailers for poles, reels of conductor, muskegs and so on, 10 to 12 years. And backhoe attachments which are again less than $50,000, again 10 to 12 years. I'd like to just confirm what I said yesterday. These are again only triggers to have a further review of those items and in the end it's the ultimate condition and maintenance cost and so on which will determine whether or not those are actually replaced.
CHAIRMAN:
Q. I don't know if you indicated, Ms. Green, the third written response, that was marked Hydro 3, I presume.

Page 8

GREENE, Q.C.:
Q. Thank you. I may have forgotten. That one with respect to the line depots in B- 103 should be marked U-Hydro No. 3.
The next undertaking also related to mobile equipment and it's found on page 150 which is undertaking number five. And the undertaking there is shown on line seven and it related to whether the proposal for 2005, there were any new light duty mobile equipment being purchased other--a totally new item versus a replacement and whether going to be in any new locations. Are you in a position to respond to that, Mr. Martin?
MR. MARTIN:
A. Yes, I am. We do have one additional item that is new to our fleet being added to a new location and that's--we have $10,000 in the total of, I believe it's $260,000 for a light motorized carrier to be used at the Holyrood generating station. Again, it's estimated at $10,000. This is a small motorized vehicle that would be used in and outside the plant to transport heavy equipment and items such as pumps, any heavy tools and equipment around

Page 9

MR. MARTIN:
the site and including inside the plant at the Holyrood generating station. That's the only additional item proposed in next year's budget.
Q. And the others will be replacement of existing pieces of light duty mobile equipment, is that correct?
MR. MARTIN:
A. At existing sites, that's correct.
Q. That completes the responses to five undertakings. There are two remaining; one is on page 180, number 6 undertaking which relates, I call it the reconciliation of B-83 from last year with B-147 from this year, relating to vehicles and the average age of the vehicles being replaced and the average kilometers for the vehicles being replaced. And the other is undertaking number seven which is found on page 190 of the transcript relating to the transmission line work being done for 2005 under the wood pile management program. We believe we will be in a position to respond to them after the break this morning, but certainly, today.

Page 10

CHAIRMAN:
Q. Thank you.
GREENE, Q.C.:
Q. Thank you, Mr. Chair, that concludes the preliminary comments.
CHAIRMAN:
Q. Thank you, Ms. Greene. Mr. Coxworthy.
HUTCHINGS, Q.C.:
Q. Mr. Chair, just in response to what my friend has presented and specifically with respect to U-Hydro 2 where we had asked for the explanation of the capacity charge in connection with the retirement, potential retirement of the Roddickton Mini Hydro plant or that scenario in the analysis, I had hoped for some explanation of the calculation of that $13,113 amount rather than simply a statement that it was the levelized annual cost of that particular capacity and just so we're on the same page with this, in connection with the Snook's Arm penstock replacement project, there's a report at Tab G, Section G, Tab 2, that does a similar type of economic analysis in respect of the replacement or retirement of the Snook's Arm

Page 11

facility. And that shows what I think should be a similar figure or similar--figure derived in a similar fashion for capacity charges, and that relates to 590 kilowatts and the number is $45,895. So if we could get some explanation of the $13,113 which would allow us to reconcile that with the $45,895 -
MR. COXWORTHY:
Q. Appendix 1, I believe, Mr. Hutchings.
HUTCHINGS, Q.C.:
Q. Appendix 1, yes, of -
MR. COXWORTHY:
Q. Section G.
HUTCHINGS, Q.C.:
Q. Section G, Tab 2. No, it's appendix C, I'm sorry, "Detailed Economic Analysis", second page has a similar type of economic analysis as was produced in IC-18. And I can't reconcile the two numbers and I was looking for the calculation of at least one so we could see if we can get those two together and understand exactly what the charges -
CHAIRMAN:
Q. You're trying to reconcile the numbers with what? I mean -

Page 12

HUTCHINGS, Q.C.:
Q. To reconcile the number in IC-18 with the number in Section G, Tab 2, the "Detailed Economic Analysis" in appendix C of the report on Snook's Arm wood stave penstock.
GREENE, Q.C.:
Q. Mr. Chair, I think we're in a position to respond to the $13,000 if he wants that level of detail for that actual calculation. Mr. Haynes will be speaking with respect to Snook's Arm and will be in a position to explain the number for Snook's Arm. The $13,000 is the annual cost associated with the capital for the 400 kilowatts. It's the interest in the depreciation on an annual basis for that particular amount of capacity. In fact, we had a discussion that we could have used the total amount of the capital cost rather than just the annual carrying cost with respect to it, which would have made, of course, the cost benefit analysis look better. And I believe Mr. Martin would be in a position to explain the calculation of the $13,000 now, as well as what I just said if that is Mr. Hutchings' desire. And Mr. Haynes

Page 13

GREENE, Q.C.:
will speak to the calculation for Snook's Arm.
CHAIRMAN:
Q. All right. That should suffice, I think, Mr. Hutchings.
HUTCHINGS, Q.C.:
Q. I think that will be helpful, yes.
CHAIRMAN:
Q. Mr. Martin.
MR. MARTIN:
A. As I understand it, the $13,113 is as was expressed in the response filed this morning. The levelized cost associated with 400 kilowatts of the 50,000 kilowatt capacity for the 50 megawatt gas turbine, combustion turbine that we would have to install in 2011 to meet new capacity requirements, it's just a percentage, a ratio of the 400 kilowatts to the 50,000 kilowatts for that new gas turbine. That's my understanding of it.
Again, the capacity that was used in the analysis for Snook's Arm no doubt was the capacity of that plant and I think it was 5 to 6 hundred kilowatts against whatever replacement, I assume again it was a 50

Page 14

megawatt gas turbine which would account for the difference in the numbers. I hope that helps, Mr. Chair.
HUTCHINGS, Q.C.:
Q. Perhaps it will be better for me to have that explored with Mr. Haynes because, you know, if it is in fact intended to be proportional, the numbers don't work.
CHAIRMAN:
Q. All right. Well you can file that with Mr. Haynes later.
HUTCHINGS, Q.C.:
Q. Yes.
CHAIRMAN:
Q. Mr. Coxworthy.
MR. COXWORTHY:
Q. Thank you, Mr. Chairman. Good morning, Mr. Holden, Mr. Martin. I had the opportunity to review the transcript with respect to where we ended off with the fall arrest equipment B-77 and I'm prepared to move on from that project having reviewed that transcript, to the next project, B-101, the air conditioning at Whitbourne and Stephenville.
And I'd like to first make reference to

Page 15

the response that was made to RFI IC-21 in relation to that project. In IC-21 there was requested particulars with respect to recorded temperatures which apparently, according to IC-21 were not formally documented. There are ranges of temperatures provided in IC-21 and it wasn't clear to me whether those were 2004 or 2003 temperatures. Are you able to clarify that?
MR. MARTIN:
A. Yes. These were all recorded in 2004.
Q. Thank you. Would it be expected or normal practice if this was a matter of concern at this particular site, the temperatures, humidity, to have some sort of formal means of recording that, whether it would be filing some sort of problem report in respect of that, would that be a normal practice within Hydro?
MR. MARTIN:
A. I think your reference to it not being formally documented is in response to the first sentence in the answer. And that is in direct relationship to the complaints that we had actually received. We had set up

Page 16

recording devices out there and there were hourly readings taken at both of those locations, both temperature and humidity throughout the summer of 2004, and all of those temperatures are documented and recorded.
Q. Thank you.
MR. MARTIN:
A. You're welcome.
Q. So does Hydro know how many days then in 2004, to use that example, that temperatures and humidity exceeded the ASHRAE standards that are referred to in IC-21 in the last paragraph of IC-21. Do we know that information?
MR. MARTIN:
A. I'm reluctant to say that we have it on a daily basis although from the answer to this question here, we obviously did record them on a daily basis. If you're referring to the ASHRAE standards down below of 20 to 22 degrees, 45 to 55 percent humidity, I am fairly confident that we should be able to provide that level of detail should you so desire.
Q. Are the ASHRAE standards, do you know,

Page 17

MR. COXWORTHY:
guidelines as opposed to--and when I say guidelines, where there is some range of (unintelligible) which is understood that can be followed, that there is margins outside of the temperatures and humidity ranges that are given there that are acceptable in certain circumstances or are they a strict standard, where all work places of this type, office work type places, have to be within those strict ranges?

MR. MARTIN:
A. I think in responding to that it's necessary to understand this is not a regulation, this does not have to be done by law or any regulatory arena. This is an engineering standard that's set up to guide engineers and others, architects and so on, in the design of facilities. And my understanding of the ASHRAE standard is that the recommended temperature and relative humidity levels in an office environment are those as stated in the response to the RFI and that again are 20 to 22 degrees Celsius with a relative humidity between 45 and 55 percent.

Page 18

Q. Do we know how many--like, if there wasn't formal documentation, there is a reference to there being numerous complaints, are you able to give us any indication, does that mean two complaints per site, ten complaints, more than ten?

MR. MARTIN:
A. Again, I can't quantify them. I can tell you that there have been complaints for both of these areas for a number of years now and I would suggest some of these probably date back 15 years or more. I can tell you that I was out at the Whitbourne office on July 31st of this year. The temperature in the office building then where our people were trying to work was 30 degrees Celsius. It was extremely uncomfortable. I was sweating profusely just stood up in the middle of the office about ten feet from a fan. These are intolerable working conditions and they have to be corrected.

Q. Are all Hydro facilities in conformance with ASHRAE standards?

MR. MARTIN:
A. I can't say that they all are. We certainly

Page 19

have air conditioning systems at our Hydro place offices here in St. John's. We've, in the past upgraded our facilities at Bishop's Falls and Port Saunders to include air conditioning where it's become obvious that the working conditions there are not acceptable. Whether I can say that all of our facilities are up to standard, these two obviously aren't. These would certainly complete the major office areas that we have on our system. All the others would have been done.

Q. So, all your other major office spaces have been air conditioned, other than these two?

MR. MARTIN:
A. The only one that comes to my mind that I'm not completely sure of would be the Happy Valley office and I'm not sure if we have air conditioning up there or not to be quite frank with you. It hasn't been an issue that I'm aware of. So, we either have it or it's not an issue.

Q. I think you've just described both the Whitbourne and Stephenville as being major office spaces?

Page 20

MR. MARTIN:
A. Yes.

Q. Okay. To what extent are those office spaces used during the day, are there staff that are in there for their whole work day working in that space most days?

MR. MARTIN:
A. Yes, we have office staff out there that are there on an eight hour a day basis, five days a week. Many of our supervisors out there work out of their offices on a daily basis. We also have crews out there. There's meeting rooms out there for safety meetings, group meetings and so on. The facilities at Whitbourne and Stephenville are used by numerous people on a daily basis.

Q. The crews obviously would be in and out. How many of the staff though at these two offices are there, not crews, not personnel that are typically in and out on a frequent basis but are using the office space as their primary work space, day in, day out?

MR. MARTIN:
A. I would estimate, and again I'm estimating, I can get a more exact figure if you need.

Page 21

MR. MARTIN:
We're talking something in the order of a half dozen people at least at each of these sites.
Q. In each of them?
MR. MARTIN:
A. That use--obviously they're permanent office fixtures on a daily basis.
Q. The lack of air conditioning has been tolerated, it certainly has been existing since 1974, is that correct, in both of these spaces?
MR. MARTIN:
A. That's correct.
Q. Is there any reason why this has become an essential capital expenditure for 2005?
(10:00 a.m.)
MR. MARTIN:
A. Only in the fact I think that it's my understanding at least, that the number of complaints have been increasing and I experienced it firsthand to be quite frank with you. Now that's not the overriding factor but I was really surprised to go out there in the middle of or at the end of July and see what kind of working conditions those

Page 22

folks had to put with it. It probably and should have been done before. It wasn't. That doesn't make it right. And what we're trying to do is correct a problem that needs to be corrected.
Q. Is it anticipated that both the Whitbourne and Stephenville sites will continue to be used as major office space for the foreseeable future?
MR. MARTIN:
A. Yes, it is.
Q. Has there been any consideration given in respect to either of those sites to whether there is some more costly means of achieving some relief to the environmental conditions out there, whether it's insulation of windows or something short of the expense of an air conditioning system?
MR. MARTIN:
A. We had our engineering people look at that. As a matter of fact, I believe in the Whitbourne office we actually tried one of these window-mounted air conditioning units. It didn't work. It didn't cool the office. It was noisy. Our people had to turn it off to be able to converse on the phone. They

Page 23

just were not workable solutions. Our engineering people are convinced that the only way to address this problem once and for all is to put in a central air conditioning system that completes the job, if you will, and does the necessary conditioning of the air at those facilities to bring it to a reasonable level of comfort.
Q. Thank you, Mr. Martin. Mr. Chair, if I may move on now to Project B-109 which is the replacement of the Nodwell heavy duty vehicle and boom.
Further to the project justification that appears on B-109, it's stated that both of these units, both the Nodwell and the boom have reached the end of their useful life. Are they still operational, are they still being utilized?
MR. MARTIN:
A. No, they are not.
Q. Okay. They've been retired out of service?
MR. MARTIN:
A. Yes, they both have.
Q. As of when?
MR. MARTIN:

Page 24

A. As of last year. I should point out -
Q. So what has--I'm sorry.
MR. MARTIN:
A. No, I think it would be interesting to the Board to understand that the last two times we tried to get this piece of equipment to a job site we failed. And it's bad enough if you're using it to go out and do routine maintenance but if you want to respond to a major outage or a critical situation out there to take this type of equipment out, only to have it unavailable, it just acerbates the problem. It--these are very important pieces of equipment that we need to maintain the system reliability that our customers demand. And we had no choice but to replace them.
Q. Does Hydro have, at either this site or any other sites, any equivalent pieces of equipment?
MR. MARTIN:
A. Do you mean with the 100 foot boom, the Nodwell with the 100 foot boom?
Q. A Nodwell with a boom of 57 feet or longer.

Page 25

MR. MARTIN:

A. No, we have one Nodwell with a 47 foot boom and a 10 foot jib on it which gives us a 57 foot reach, vertically. We have two other Nodwells with 47 foot booms. A lot of our steel structures are between 60 and 85 feet high. They cannot be accessed with those pieces of equipment and this becomes extremely important when we have failures of structures, the structures are iced up and our line workers do not climb them. This is when this piece of equipment will really kick in and pay for itself in no time flat.

I have a couple of pictures here if the Board would indulge me, of some of the things we--our linemen encounter out on the field at various times. This is a 230 kV structure on our transmission line TL-228 where obviously the bridge on the top of the structure has collapsed under icing conditions. It's difficult to see from this photo but this tower is encased in glaze ice, perhaps an inch or a half inch of glaze ice making the tower impossible to climb. A 47 foot boom or a 57 foot boom will not get anybody up there. The

Page 26

only answer to try and repair this tower is either wait until the ice melts and falls off allowing our crews to climb, or bring in a piece of equipment that will allow us to boom them up there to try and effect repairs. This is basically what we're looking for this particular item for. It will be critical if we ever get into these types of situations again. I actually believe on this particular case and I stand to be corrected on this stuff, but I think we were out for four or five days in trying to get this structure repaired because we just couldn't get up there to effect the work.

Q. And this is a structure that can only be repaired with a 100 foot boom equipped Nodwell?

MR. MARTIN:

A. I'm not saying it could only be repaired with that. There is no piece of equipment on the island that I know of we could go and source or rent. Most of the cranes as you'll appreciate are for on-road or, you know, they're retired vehicles and so on. And our 47 foot booms, 57 foot booms just wouldn't cut

Page 27

it.

Q. So at present, Hydro doesn't have any Nodwell with 100 foot boom, is that correct?

MR. MARTIN:

A. That's correct.

Q. So how have you been addressing these types of issues then for however many years it will have been when they do occur? I mean do you always wait then until the summer months to deal with these issues?

MR. MARTIN:

A. No, we don't necessarily have to wait till the summer months. If we got into a situation like this in the middle of the winter or early spring, we would typically have to wait until the ice melted off the tower and go and fix it. And we have done that. On one occasion I do remember up behind Oxen Pond terminal station here in St. John's we had a similar occurrence where a tower failed at the bridge like this. Our own equipment was inadequate. We were fortunate enough that the tower was very close to the terminal station and we were able to source a piece of rental equipment from a local crane company that allowed us to

Page 28

get up and repair the structure. But had it been further away from the road and inaccessible, we would have again had to wait until either the ice cleared until we could get up there and fix it.

Q. So you have made inquiries and up to present time there's no opportunity to rent or lease this type of equipment, heavy duty track equipment with 100 foot boom?

MR. MARTIN:

A. That's correct.

Q. You've said that this particular piece of equipment to be replaced has been retired since 2003, so has it been a question of Hydro then making do with the remaining equipment that you described that you do have, the other Nodwells?

MR. MARTIN:

A. That's correct.

Q. The photograph you're showing us here of the damaged tower, do you know when that was, when that was taken?

MR. MARTIN:

A. I believe that was 1984, but again, I stand to be corrected on that.

Page 29

MR. COXWORTHY:

Q. Is that a spectacular or unusual failure even that we're seeing there or is that a common one?

MR. MARTIN:

A. It's not common, thank heavens. We typically have seen these. This is part of the reason why we did the Avalon upgrade in early 2000. This is most prevalent or has been most prevalent on the Avalon peninsula where it's been--I guess we've seen incidents like this on an average of every eight years. We've seen it on--again, this is TL-228 on the west coast of the province and we've seen occurrences of this nature on the Buchans plateau and other places. It's not rare, thank heavens it's not frequent. It's--we see it, it's on an infrequent basis but when we do see it, I think it's somewhat spectacular. The consequences of this--if I could just take Mr. O'Rielly--could you take me to the front page of that presentation. I just want to--this picture here, we've seen it several times I guess throughout the hearing. If you look on the left hand side, this is a 138 kV

Page 30

structure on the west coast on TL-214 that we were upgrading this summer. And you'll see that the two line workers, and I'm sure you'll appreciate this is why these guys are the heroes of our business. They're up about 70 or 75 feet replacing insulators on that particular structure. If you put those gentlemen out in the field under conditions that we just saw in that structure on TL-228, there was no way they can get up there to do any work, it's just impossible. This is a radial line that feeds the southwest coast of the province. If we get into a situation like this in the middle of the winter or early spring where we get these towers iced up and fail, we're out of business until the ice melts, without this piece of equipment. It could mean the difference of several hours in getting it repaired, to several days. That's the reason we want this particular item.

Q. And really, the important thing is to have the 100 foot boom on a reliable carrier, is that fair?

MR. MARTIN:

A. A reliable carrier that can get you in over

Page 31

bog and harsh ground, yes.

Q. With the other Nodwells that remain in the Hydro fleet, is there any means of retrofitting those to fit them with 100 foot boom?

MR. MARTIN:

A. My understanding is if we tried to do that we would have to perhaps re-engineer and re-manufacture the chassis. You're talking about a significant difference in the boom going from 47 feet to 100 feet. We're not even sure that that can be done, we're not sure of the cost of that. The most practical solution to all of this is to go out and get the Nodwell we're replacing which is still a piece of work equipment, it's 31 years old, the boom was 26 years old--from our perspective it only makes sense to go out and buy a completely new piece of equipment that can handle this type of situation for at least hopefully another 30 years or more.

Q. Do you know what the difference in cost is between buying a new Nodwell with the 57 foot boom which this one had, the difference in price between that and what's being proposed

Page 32

which is the Nodwell with the 100 boom?

MR. MARTIN:

A. The extra extension on the boom from the 57 feet to 100 feet is in the order of $150,000.

Q. So there's no difference then in the carrier. If you were to buy a new carrier, a new heavy duty off-road vehicle today for a 57 foot boom, there'd be no difference in the price of that carrier and the carrier that you would be purchasing for 100 foot boom?

MR. MARTIN:

A. I don't think I'm qualified to answer that question.

Q. You don't know.

MR. MARTIN:

A. I don't know.

Q. The only additional cost here you're certain of is the $150,000 associated with the longer boom?

MR. MARTIN:

A. That's correct.

Q. Mr. Chair, if we may move on then to B-110 which is the purchase of the Mobile Oil Reclamation Unit. And if I may make reference then as well to the response to RFI, IC-76.

Page 33

MR. COXWORTHY:

And we were--we asked by IC-76 whether a cost benefit analysis had been completed in respect of this project and the response was that there was no formal cost benefit analysis done for proposal. One of the savings that is identified is that the purchase will reduce a labour requirement from having three workers to two workers. But has that cost benefit of that saving been measured against a $530,000 capital expenditure plus the future operating and replacement cost of this particular piece of equipment?

MR. HOLDEN:

A. If I could answer that question. The cost component associated with the fewer people on site is not the major issue here related to the cost benefits to buying this equipment over renting it. The big benefits here are as we pointed out in our explanation, is the benefits of the cost per unit for the unit to process the transformers related to what we would have to pay if we had to rent those services. That's the big benefit. And as you see in our explanation when you just looked at

Page 34

those costs by themselves, it's something in the order of--what was the pay back period that we quoted there, eight to ten years at least, if we were able to do four or five units a year. But with our own equipment we expect to be able to do more than four or five units per year and of course the cost benefit then of owning our own equipment as opposed to buying the services is much greater than that. And so that's the main component in the cost benefit, it's just a straight comparison of dollars. The added benefits then are in relation to the number of workers that we have required to perform the operation. We still have to have one man on site to hold the safety permits and everything while the equipment is in service and then there's only another man then, another employee from Hydro to help operate the equipment. So you have the--the lesser labour cost is a minor component. The big advantage is the dollars per unit for processing and also the flexibility and availability of it. And with respect to flexibility and availability, there's no one on the island of Newfoundland

Page 35

or in the province of Newfoundland and Labrador that has this piece of equipment. You have to rent this and it gets brought in from central Canada mostly. And those contractors then have to schedule our services against all the other services they have to provide elsewhere in the country, and particularly I guess they operate from west to east. So, there you have restrictions then on when the equipment is available to you and in the last couple of years when we were doing this, our schedules for when we could get the services were quite strict. And strict in the sense that we can only do it in the first two weeks of August. Shut down your plants, do what you have to, that's the only time this piece of equipment is available. So we're really restricted in the number of transformers that we could process. So that's one of the other big benefits to owning the equipment ourselves rather than buying the services.

Q. Thank you, Mr. Holden. As you've pointed out, in the operating experience for this project, you've indicated that there was a recent

Page 36

service contract for oil regeneration in respect of Bay D'Espoir where there was a cost of $150,000 with an average cost of $50,000 per transformer. I believe those are the numbers you're referring to in comparing the relative cost and pay back periods for continuing with that out sourcing as opposed to doing it yourselves.

MR. HOLDEN:

A. Yes, those are the costs that we use to make the analysis or make the comparison.

Q. That example that's given, of the $150,000 for the recent work in Bay D'Espoir, is that representative of how much it would cost to do this oil regeneration work for any transformer or was there something particular to that project that resulted in the cost being higher than it might otherwise?

MR. HOLDEN:

A. That cost there of $50,000 per transformer is representative of the cost that we had to pay in the last couple of years. It's a very low price when you consider that the service contractors are getting more and more business all the time from other utilities in the

Page 37

MR. HOLDEN:
country because their transformers are aging as well and this business is coming up and these costs are going to go up, just on basic demand and also on availability. So these contractors who are providing this service now, they're operating out of Ontario and Quebec and there's much more business there in Ontario and Quebec for them to provide the service. And their costs to come down here are higher than what they would be to provide those same services in Ontario and Quebec. So these costs here, in our opinion, are lower than what we would see in the future. We would see much higher prices than this in the future because of the increased demand on the equipment and the increasing progression of age by utility equipment and other utilities.

Q. Thank you, Mr. Holden. Mr. Holden, do you know whether the cost for the Bay D'Espoir project, the $150,000, whether that was less expensive per unit, per transformer because more than one transformer was being done at one time, would it have been a higher per transformer cost if only one or two

Page 38

transformers were being worked on?

MR. HOLDEN:

A. Yes, it certainly would have been because the contractor would have to trade off his costs against the number of units that he was processing because he has to pay for the mobilization from Ontario to Bay D'Espoir. So what we were trying to do here and it's as much as we could do because of the very strict outage requirements, it's as much as we could do to stretch out to get three units to keep the cost per unit down. And we couldn't tolerate any more because we couldn't take the transformers out of service in that short time period because the contractor would come down, mobilize, come down and do one, two, three transformers right in a row and then get out of town as fast as they could. So we can't take the whole plant, Bay D'Espoir plant off service and process all the transformers on one mobilization. However, if we had our own piece of equipment, we have much more flexibility in doing that and we'd be able to stage these processes now over the whole year and probably on the off season coordinate the

Page 39

outages on the units with the load profile on the system and take advantage of the outages that we couldn't by purchasing the services from a contractor.

Q. Mr. Holden, even with that additional flexibility that you would have with owning your own unit, I think you're anticipating still only being able to do four to five transformer units per year?

MR. HOLDEN:

A. No. We're anticipating that we should be able to do more than four or five. And again, that depends on the outage availabilities that we have. But we can coordinate that much better now and we could see more transformers being processed here on a yearly basis.

Q. Okay. Well, the project justification speaks of a regeneration program of four to five units per year. How many more than that are you anticipating may be able to be done per year if you have your own unit?

MR. HOLDEN:

A. If we have our own unit, we can increase that number, by how much it's difficult to quantify because you would have to look at the outage

Page 40

availabilities on the system and plan out your work. But, you could conceivably double that number in one year.

Q. Has there been consideration given by Hydro to making a request for proposals to the private sector to determine, you know, on the basis that the intention of Hydro is, as I understand the project justification, to eventually conduct this regeneration program on all its power transformers, all 161, on that basis had there been a request for proposal sent out to private sector for that piece of work to see whether that might attract, whether it's the businesses you identified in Ontario or Quebec or perhaps other contractors who might enter this area if they knew that that piece of work of that magnitude would be available?

MR. HOLDEN:

A. No, we didn't entertain that idea.

Q. May I ask why not?

MR. HOLDEN:

A. Because we saw this here as the best idea of owning your own equipment. You have control over that equipment and you have complete

Page 41

MR. HOLDEN:
control with respect to how and when you use it and how you coordinate it with your outages. If you thought about a contractor in Newfoundland having a piece of equipment here, you would not have that flexibility. That contractor if they were solely relying on Newfoundland Hydro's business, they would have to be at the beck and call to Newfoundland Hydro all the time. But they wouldn't do that. They'd only be able to quote on our business and then they'd also be looking for other business as well. And of course, then you'd get into the problem of availability and flexibility.

MR. MARTIN:
A. I think also it would be rather difficult to put together an RFP for a proposal on that that would cover 20 years, and again, not knowing or having the uncertainty of the outages windows that we could see for the various units, 161 units throughout that time line. I don't really think, Mr. Coxworthy, that it would be practical to go out with an RFP to cover a service for all 161

Page 42

transformers. I think that would be very difficult for us to put together and even more difficult for a contractor out there to be able to bid on.
Q. But I believe, Mr. Martin, as Mr. Holden said, it wasn't in fact even looked at whether it would be practical or not, is that correct?

MR. MARTIN:
A. No more than what I've just described a few minutes ago.
Q. The transformers that have been described in the project experience is 67 of 161 that are showing parameters outside the guideline limits, does Hydro know for how long they've been outside of those guideline limits?

MR. HOLDEN:
A. Hydro knows how long that is. We don't know here on the stand now. But that's contained in our maintenance records. We do maintenance inspections and gas and oil analysis on our transformers on a regular basis. And sometimes I think the basic is annual testing and inspection and monthly testing, monthly and annual testing, depending on what you're doing. And then if trouble situations seem to

Page 43

be appearing, we will do more frequent inspections. That information is available in our maintenance databases, but I can't answer to any specifics here this morning.
Q. At a rate of regeneration that was being proposed, at least by the project justification of four or five units per year, obviously it's anticipated that many of these 67 units, the ones that have already been identified as being outside the parameters, will continue to be in that condition for some period of time, is that correct?

MR. HOLDEN:
A. For some period of time, yes, that is correct. And it depends on the criticality. They're not all outside the acceptable ranges by the same amount. It's a matter of the same thing as we look after the wood poles, we're looking at the age of the piece of equipment and the criticality of it on the system and we'll focus on the most serious cases first and work our way towards the less serious cases.

MR. MARTIN:
A. It might help just to point out that in our operating experience we identified 17

Page 44

transformers of those 67 that were considered a high priority and that would have to undergo this regeneration process within the next five years. If we take a $50,000 average for those, and again, that might be light, depending on when we can get the outage windows and so on, we're looking at something close to a million dollars to regenerate the oil in those 17 units over the next five years. And what we're looking at here is a capital expenditure of $530,000 to do the same work. I mean, I guess what we're saying is from our perspective this project is economically feasible and in the best interests of the ratepayers and our customers even in the short term. We don't need to go out 15, 20 years. We can pay for this thing very, very quickly to the benefit of our customers. I hope that helps somewhat.
Q. Yes, thank you, Mr. Martin. If the intention is to eventually do all 161 power transformers, and even if you increase the rate of, the yearly rate of regeneration to four or five units per year, this will be a long-term project, I think 20 years has been

Page 45

MR. COXWORTHY:
mentioned, and I presume that that's what you anticipate that it may take, 20 years, to get to all 161 of those power transformers, is that correct?
MR. HOLDEN:
A. It will take that time. But you have to realize that this is a piece of maintenance equipment, it's a regular piece of maintenance equipment that we have to buy to maintain the transformers and as the transformers--the older transformers are going to be processed first and you work your way down to the ones that are not so old and less critical and less serious. Well, yes, if you wanted to do a straight number calculation and divide 161 transformers by another number, you'd get a rate. But, I don't think you can look at it that way. You have to look at it and from the point of view of the condition of the transformers and what ones have to be done first and then define your rate and define which ones you're doing based on the condition of each unit. That's how the program will work.

Page 46

Q. But quite apart them from the condition of the transformers there's also the other limitation that you can only take so many of these transformers down at any one time, is that correct? That's also a limitation on how many you can do per year?
MR. HOLDEN:
A. That's also a limitation of how many we can do a year, yes, it's how many we can take out of service at any one time.
Q. Further to the response that was given to RFI IC-28, the depreciable service life for this particular piece of oil reformation equipment that's being proposed to purchase would be ten years. And I do acknowledge that the RFI response also says that the actual operational service life is expected to be considerably longer. Is it possible, though, that within the context of what may very well be a 20 year program that there will be a need to purchase by Hydro a second oil reformation piece of equipment, a new one before that program can be completed?
MR. HOLDEN:
A. No, we don't anticipate that.

Page 47

Q. You anticipate you'll get to at least the 20 years or whatever it takes to get to all 161 transformers?
MR. HOLDEN:
A. We anticipate we should be able to get a service life of this piece of equipment much longer than ten years. And we will maintain this piece of equipment and use it to maintain the power transformers on the system and we'll try to extend the life of it as much as we can until it gets to a point where it's no longer feasible or economical to operate it, just like the Nodwell and we'll have to replace it and buy another one. And we see that time frame as being considerably longer than the ten years.
Q. Has Hydro had any prior experience with operating this type of equipment, the oil reformation equipment?
MR. HOLDEN:
A. We have a similar piece of equipment now, it's called a degassifier equipment, and what that does is it takes gas out of the transformer oil. We've had that piece of equipment since the late 60s when we first started and we're

Page 48

still operating that piece of equipment. So we do have experience with this type of equipment, we do know how to maintain and operate it and we do know how to make it last as long as we can.
Q. Thank you, Mr. Holden. Mr. Chair, if we may move on then to project B-112, which is the replacement of the Doble F2000 Relay Test Equipment? Thanks. Mr. Martin, Mr. Holden, the original project justification for this project as given at B-112 was that the current equipment manufacturer wouldn't be extending support for the current equipment beyond 2004. And of course as was learned pursuant to the response to RFI IC-30, it's now been determined that the manufacturer support will continue until the end of 2006, so for anther two years beyond what was originally contemplated when this project justification was put forward. Is there any reason, given that, why this project therefore can't be deferred at least to the 2006 capital budget?
(10:30 a.m.)

Page 49

MR. MARTIN:

A. Yes, we believe there is. In response to IC-29, if I can refer you to that, the response to IC-29, this lays out the reasoning for wanting to replace the existing test equipment, not only from its retirement perspective and manufacturer support, but it's a much better piece of equipment and will enable us to do much more extensive testing and better testing of all of this new equipment that we've come to own over the last number of years, digital type equipment, not only relaying equipment, but exciters, governors and so on. If I can refer you to the last sentence in that particular response, we say "Most of this generating equipment such as exciters is critical, making the requirement for this test equipment imperative and readily accessible." We do appreciate the fact that the Board could defer this replacement for another two years, but we think in the best interests of being able to do effective testing over generation plants in our protection and control equipment in our terminal stations and so on we would be much

Page 50

better prepared to do that and more effective if we were to replace that equipment next year.

Q. Thank you, Mr. Martin. In the original project justification beyond the concern that at that time the belief being that the manufacturer support was going to end beyond 2004, the only additional comment that was made in the project justification is that the new technology test equipment would be more compatible with the other new digital equipment that have been purchased by Hydro over the years. Yes, IC-29 proposes that a new state of the art, and that's the term that's used in IC-29, digital signal processing equipment, it goes further to say would be more compatible, and it actually suggests that it's needed to test and to maintain other new digital equipment. Is that the case or is it a question simply of the new digital test equipment being more compatible?

MR. MARTIN:

A. I think if I can take you back to B-112 again, you may have only read the first part of the sentence in the justification. It says, "In

Page 51

addition, the new technology test equipment is more compatible with the new computerized relays and metering units that are being used by Hydro and will allow more comprehensive and efficient testing of the new relay." And it's not only the relaying, it's the exciters, the governors and all of the other digital equipment we have at our generating plants and other facilities.

Q. Is that equipment not being tested now with the current test equipment?

MR. MARTIN:

A. It is.

Q. Okay.

MR. MARTIN:

A. But not, again, as comprehensively and as efficiently and as effectively as it would be, obviously, with the new test sets.

Q. Have any problems been encountered using the current test equipment in testing the new digital equipment?

MR. MARTIN:

A. I can't talk to any specifics in that regard.

Q. When you say more comprehensive, yes, it might be nice to have a more comprehensive testing,

Page 52

but has there been any problems that have arisen because of the current testing equipment being used?

MR. MARTIN:

A. Again, I can't provide you any details that our field technicians may run into with regards to problems with the current test equipment.

MR. HOLDEN:

A. If I could add to that, the problems are associated with the limitations in the old equipment to be able to test the new more modern digital equipment that we have. And so the old Doble test that could bring you up to a certain level of technology and test the relays and controls and the exciters and that to a certain level. But if we replace new equipment, there's more sophisticated technology, this old equipment here will not be able to fully test it. We can test it to a certain level, but we can't fully test it as comprehensively as is necessary. The newer Doble equipment will allow you to bring your-- will bring your test equipment up to the same level as your operating equipment.

Page 53

MR. COXWORTHY:

Q. Is all of your operating equipment, Mr. Holden, up to this new higher digital level that needs the new Doble relay system, the new state-of-the-art system to comprehensively test it?

MR. HOLDEN:

A. No, not all of our equipment is up to that level, but newer equipment is. The Doble equipment that we have can be used to test some of the older equipment, but as we move forward, a lot of new systems are being installed. The technology is more sophisticated and the older test equipment becomes more and more unsuitable as time goes on. This is why the equipment--and particularly in Bay D'Espoir where the--in this project here, the unit for Bay D'Espoir is a new piece of equipment that they don't have at that site now, and so that's required down there because of the new exciters and new equipment that was installed over the last few years and then the other sites in the transmission system, the other three units are required to upgrade the tool set for the

Page 54

equipment to the degree of sophistication that the operating equipment is at today.

Q. Mr. Holden, just to be clear, is there any current operating equipment being used by Hydro that is not being tested or is not able to be tested because you don't have this new state-of-the-art Doble relay test system?

MR. HOLDEN:

A. As I said, the degree of comprehensiveness of the testing that we can perform with the old equipment is not as much as it should be. We can only test the new digital equipment to a certain level with the old test equipment.

Q. Thank you, Mr. Holden and Mr. Martin. I believe those are all the questions I have for the TRO panel. Thank you. Thank you, Mr. Chair.

CHAIRMAN:

Q. Thank you, Mr. Coxworthy. Mr. Kennedy.

MR. KENNEDY:

Q. Chair, thank you. I just have a couple of questions, Chair and members of the panel. Mr. Holden and Mr. Martin, one quick question on the Wood Pole Management Program. You were referring to the treatment process, treating

Page 55

the poles with Boron, I think you indicated?

MR. MARTIN:

A. That's correct.

Q. And I'm wondering is that a common practice in the industry used elsewhere?

MR. MARTIN:

A. The other utilities that I'm aware of that are involved in a program similar to this include B.C. Hydro, Manitoba Hydro, Hydro Quebec. I believe Hydro One, the transmission arm of the old Ontario Hydro are involved in this type of program as well as, I do believe New Brunswick Power as well. Whether they--and I think most of them do retreat. They all certainly do inspections. They do testing; they do coring; they do retention levels and so on, retention level testing. And some of them do treat, and I believe some of them do use Boron. They may not exclusively use Boron or some other chemical, but some of those utilities are involved in retreating their poles, yes.

Q. Curious, you've indicated in your report and as I think you spoke to during cross-examination by counsel for the Industrial Customers that you're postulating a extension

Page 56

in the serviceable life of these wood poles as a result of your inspection program and in part your treatment of some of those poles with this Boron treatment process, correct?

MR. MARTIN:

A. Yes, that's correct.

Q. And I'm wondering, and in turn your net present value calculation, if you will, supporting the project is based on that assumption that postulation of the extension in the service life of the wood poles?

MR. MARTIN:

A. Yes, only as regards to the benefits from treatment. The four and a half million dollars we quote do not include, does not include the extra benefit we will get through the analysis and extending the life of these poles by not replacing prematurely. That's where the red line goes up that we really can't quantify at this point in time.

Q. Right, that's what I was wondering is the track record, if there is one, of other utilities using this type of treatment process, does that track record support the postulated extension in the service life?

Page 57

MR. MARTIN:

A. I can't say for sure that it has. I think some of the utilities are not much more ahead of the game than we are, with regards to looking at treatment programs and so on. Obviously some of the information that's available in the literature that we've used before, the IOWA curves and so on, would certainly indicate, to our satisfaction at least, that the treatment of the poles is certainly going to have significant benefit, and we quite frankly believe that what we're proposing in here is the minimum we're going to get out of this program. We actually think it will be better than that. I think the other thing, Mr. Kennedy and Board, that's worth repeating is that the $36 million we're proposing here is not all new money. Most of the money that we're proposing to spend in this program, we're already spending through inspection, testing and so on. The materials that we actually use to treat each pole costs approximately $30. So we're looking at treating with materials that cost $30 a pole that to replace would cost us $7,000.

Page 58

Q. So the incremental cost of treating the poles, as part of your Wood Management Program, is minimal? Is that -

MR. MARTIN:

A. It is. The treatment part is a very small part of it, extremely small part.

Q. I wonder if we could just turn to B-57, please? And gentlemen, this is just a project--if we could go back to page one, please? Yes. Upgrading a distribution system in your L'Anse au Loup setup, if you will, and the question I had related to--just give people just a moment just to skim that, and the witnesses in turn. And it's clearly indicated there what the project consists up, general upgrading of your distribution system in that area. If you could just turn to page two. Part of your project justification is "these pole and insulator replacements provide the potential to reduce the SAIFI to 24.61 and the SAIDI to 19.99" and the question I had was, I wonder if you could explain how you came up with that analysis or the result? What analysis did you conduct in order to come up with these projected SAIFI and SAIDI

Page 59

statistics once the upgrade had been completed?

MR. MARTIN:

A. Yes. What we did is called a what-if analysis, and basically we went back over the last five years of outage records for that particular system, tried to identify the outages that were related to things that we were going to correct under this program, such as the replacement of these pin type insulators and so on. Extracted those incidents from the database and then recalculated the SAIDI and SAIFI numbers with those items extracted, and that's where we came up with the numbers. I think it's important in this one to point out that you may not see a significant increase over the current indices as a result. We don't only replace and upgrade when we get a significant problem with regards to the statistics. If we see something that's going to even make those statistics worse, if the system condition is worsening and we know that the numbers are going to degrade even further, then we are proactive and we go in and do this type of

Page 60

upgrade before the statistics get even worse than what they are at the current time.

Q. So generally, does the company have a target then that it attempts to achieve when determining, you know, how much to replace in a particular distribution upgrade project?

MR. MARTIN:

A. We have an overall target for our rural systems, and I can quote you those numbers if you're interested?

Q. Yes, please.

MR. MARTIN:

A. The SAIDI on distribution for 2004 is targeted at 11.2; that's the overall Hydro average. And the SAIFI is 7.2.

Q. Okay. You said rural systems, and so they're the SAIFI and SAIDI statistics specific to the rural systems?

MR. MARTIN:

A. For all the distribution systems -

Q. All your distribution systems?

MR. MARTIN:

A. - that Hydro owns and operates, that's right, whether they be isolated or interconnected.

Q. Okay. So it's the Hydro, okay. The next

Page 61

MR. KENNEDY:
question I had was related to your Powerpoint presentation actually at the beginning, the Information No. 1, and I think it was page ten, yes, page ten. Here we go. And you were--this was a page that, I believe, gentlemen, you brought up during your direct examination and I think you may have been brought back to it during your cross. And the question I had is just a click off the back of the envelope calculation of taking your numbers for 1998 and your numbers for 2000 and working out how much it cost to replace the poles on a per pole basis. So for instance, in 1998, it worked out to $7,595 a pole, so 79 poles at 600,000.

MR. MARTIN:
A. Um-hm.
Q. And then the same number for 2000, you fixed 82 poles--or sorry, replaced 82 poles for 420,000 and then that worked out to $5,122 a pole.

MR. MARTIN:
A. Right.
Q. And I'm wondering if you can comment on the

Page 62

utility, excuse the pun, but the usefulness of that type of analysis, doing a unit cost analysis on the replacement of poles?

(10:45 a.m.)

MR. MARTIN:
A. You really can't compare the two numbers, if that's your point in this example, and there's a couple of reasons why I think the average cost on the Avalon were higher than in Central. One thing that obviously affects the cost of replacing transmission line poles is where they are and access. So access to the location for the particular structure is a significant impact on the cost. Another one that I think perhaps had more impact on these particular numbers is that on the Avalon they would have all been 230 kV structures, larger poles, larger structures and higher costs for the poles themselves, whereas in Central, we no doubt perhaps had some 230 kV, no doubt 138 kV and 69 kV structures included in that. So you're really not comparing apples to apples. It's -
Q. Okay. So not all poles are created equal.

MR. MARTIN:

Page 63

A. - apples to oranges. Not all poles are created equal, no.
Q. And so I wonder if we could just flip then to B-48 as an example of another area where this type of analysis could be conducted, and am I correct in understanding this would be Hydro's total budget for new service extensions or replacement of obsolete service extensions to its customer base? Is that right?

MR. MARTIN:
A. This is basically for new customers.
Q. New customers?

MR. MARTIN:
A. That's right.
Q. And I assume I could, if I asked, or you could if asked, provide a unit cost of how much it was costing per new customer for Hydro to hook up its new customers?

MR. MARTIN:
A. Only by taking the actual numbers and dividing them by the number of customers that we actually hooked up.
Q. Sure. It wouldn't be a particularly complicated calculation then?

MR. MARTIN:

Page 64

A. No, it wouldn't. It wouldn't do you a whole lot of benefit either, I think, because it obviously different costs to hook up different customers.
Q. That's what I was going to ask you. As a simple average then, on that basis, if you could comment on the usefulness of that type of analysis?

MR. MARTIN:
A. These particular budgets here, I'm sure you'll appreciate, as we have put in the project description here, are based on the average of the last five years of Hydro's costs for new customers. Again, if there's anything extraordinary that we know of, that a new subdivision is coming along or something, the numbers could potentially be adjusted for that. But generally speaking, these are numbers based on the average of the last five years. You could hook up a customer with a simple drop from an existing distribution line and transformer that's going to cost you very few dollars. Another customer, you might have to install a couple of poles with conductor or drops and transformers that cost you a lot

Page 65

MR. MARTIN:
more dollars. So again, you're really not comparing apples to apples, if I understand your point, Mr. Kennedy.
Q. I think so. I think we might be missing one small -
MR. MARTIN:
A. Okay. That wouldn't be unusual, I'm sure.
Q. - micro-adjustment there. You seem to be indicating that if we had a unit cost that was comparing how much did it cost Hydro to hook up a specific customer A versus how much it cost to hook up a specific customer B, that that may vary and that would be driven by what the physical circumstances were in each case?
MR. MARTIN:
A. Absolutely.
Q. Okay. But if we take an overall average of your unit costs for all your customer groups, unless there was a change in the growth dynamic, one customer group grew faster than another customer group -
MR. MARTIN:
A. Right.
Q. - that was in the Hydro group of customers -

Page 66

MR. MARTIN:
A. Yes.
Q. - your average should make sense year over year, shouldn't it?
MR. MARTIN:
A. It should make sense year over year, and that's the rationale for doing the budget in this particular way.
Q. Right. And so that's what I'm asking you, if you could--I respect your comments concerning individual customers. I wonder if you could comment on the usefulness of conducting analysis that uses that overall company average on a unit-cost basis for hooking up new customers?
MR. MARTIN:
A. You mean do I think it makes sense to do that?
Q. Correct.
MR. MARTIN:
A. Yes, I certainly do. I mean, again, this is the way this particular budget was prepared. It's been prepared like this for the last number of years. You may see in any particular year, with regards to service extensions or distribution upgrades, that we

Page 67

overspend and we may significantly overspend in a particular area. That doesn't necessarily mean we change the rationale for the next year's budget. We would again go back to the five-year average, knowing that long term, this is the way that things are going to work out from a budget and an actual cost perspective.
Q. Okay. And what's been Hydro's experience to date with your unit cost for new customers? Has it been increasing, decreasing, staying relatively stable?
MR. MARTIN:
A. You mean the cost per customer?
Q. On a year-by-year basis.
MR. MARTIN:
A. I think the costs have been gradually escalating over the years, yes.
Q. Okay.
MR. MARTIN:
A. And there have been some years, like I said before, when you might get into a new subdivision in Happy Valley-Goose Bay that you see a spike that you probably wouldn't see in subsequent years. But again, over time, these

Page 68

per unit costs, we think are the best way to budget these particular items.
Q. So really you're using a rolling average, right?
MR. MARTIN:
A. That's correct.
Q. Yes. Okay. Speaking of averages and trends, I wonder if we could just speak then to a line of questioning that counsel for the Industrial Customers pursued concerning the growth in the TRO side of your capital budget, and if I copied it down right, I believe counsel for the Industrials indicated that your budget--and he looked at your last two capital budgets and pulled it out of, I think it was Schedule F, out of your filings.
MR. MARTIN:
A. Right.
Q. That your budget had gone in 2003 from 10.3 million increased to 12.2 million in 2004 and then it was 19.1 million in 2005. I've rounded them off. And in response to those questions concerning the growth in that TRO budget, you indicated, and I'm going to paraphrase it, as I scratched it down while

Page 69

MR. KENNEDY:
you were talking, that you said the budget ebbs and flows depending on the work that needs to be done.
MR. MARTIN:
A. That's correct.
Q. Right. And so, I'm not trying to be facetious, but there's no actual ebb there. It seems to be mostly flow. So I was wondering--I wonder if you could comment on what an appropriate period would be to achieve that kind of budget smoothing, if you will? What would be an appropriate review period to calculate annual average expenditures in your TRO budget specifically? And then, what would be, in your opinion, related to that, a reasonable plus or minus off of that average?
GREENE, Q.C.:
Q. Just for the record, Mr. Martin, in his reply, had indicated that in earlier years the TRO budget had in fact been higher because of the Avalon upgrades. So there was -
MR. MARTIN:
A. The budget does -
Q. - there was a bit of ebbing as well.

Page 70

MR. MARTIN:
A. - believe it or not, the budget does ebb and flow. It -
MR. KENNEDY:
Q. Sure, yes, and I -
MR. MARTIN:
A. You will see ups and downs in the budget over the last ten years, I'm sure. And to be quite frank, I don't think I can answer your question.
Q. Okay.
MR. MARTIN:
A. You know, you could have a given year when we require a new diesel plant somewhere, a transmission line upgrade where the budget is going to spike up. I really don't think you can establish a ceiling, if you will, and then work off an escalator to try and come to some reasonable number. I personally don't believe you can do that. Maybe the economists and the accountants and others, people in the financial circles, can offer a better explanation. As an engineer, I really don't think you're going to be able to do that with any certainty.

Page 71

Q. Okay. That's all the questions I have, Chair, members of the Panel. Thank you, gentlemen.
CHAIRMAN:
Q. Thank you, Mr. Kennedy. I think we'll take a break at this particular point in time, before the Board comes back with any questions. So we'll take a 15-minute break. Thank you.
(BREAK - 10:52 a.m.)
(RESUME - 11:12 a.m.)
GREENE, Q.C.:
Q. Mr. Chair, the preliminary matter, we are in a position to respond to the other two undertakings, and I'll leave it to the panel as to whether you'd like to do this now or after. We probably should do it while Mr. Martin and Mr. Holden are available if there's any questions arising from the responses, but -
CHAIRMAN:
Q. Fine, carry on.
GREENE, Q.C.:
Q. Okay. As indicated this morning, we had two undertakings that we didn't answer at that time, and in addition, there was a third item relating to the value of the La Scie depot on

Page 72

page 136 of the transcript. It wasn't actually in the form of an undertaking, but the question was "what was the value remaining on the books of the La Scie depot which had been disposed of?" and we would like to provide that information for the panel, and the answer is there was no value left on the books of Hydro. It had been fully depreciated. So the La Scie depot which has been removed from service was fully depreciated with no remaining value.
The other two actual undertakings, we had two which was undertaking number six, found on page 180, which related to the difference in the age and kilometre criteria used in B-83 last year relating to vehicles and B-147 this year relating to vehicles. So perhaps if we could see, Mr. O'Rielly, first the one from this year, B-147.
Now, Mr. Martin, have you had the opportunity to review the criteria at the bottom of the page there first?
MR. MARTIN:
A. Yes, I have.
Q. Okay. And now if we can go to B-83 from last

Page 73

GREENE, Q.C.:
year, Mr. O'Rielly, and the question was why is the criteria shown different--why is there a difference between the two? There we go. You can see the bottom of that page, please, Mr. O'Rielly, okay. Mr. Martin, could you please explain or provide an answer to that question, please?

MR. MARTIN:
A. Yes. In point of fact, the text at the bottom of 147, that's this year's proposal, is in error. Obviously with the change in the vehicles proposed last year versus what we are actually looking at replacing after our fleet review, the number of vehicles has changed and the actual numbers that should appear at the bottom of B-47 are as follows.
Q. That's B-147.

MR. MARTIN:
A. B-147, I'm sorry. Are as follows: the category 1000 and 2000 vehicles have an average life or average age, I should say, of six years and 167,000 kilometres.
Q. So what's shown on B-147, at the bottom there, the six years is correct, but it's the

Page 74

kilometres is incorrect? Is that -

MR. MARTIN:
A. That is correct. It should be 167 versus 150. The category 3000 have an average age of seven years and 218,000 kilometres, and the category 4000 vehicles have an average age of eight years and 208,000 kilometres.
Q. So those represent the average age and the kilometres for the vehicles that are proposed to be replaced now, under B-147, for this year? Is that correct?

MR. MARTIN:
A. That is correct.
Q. Now they're still not the same as what was shown in B-83 last year. Why is that?

MR. MARTIN:
A. Because again, the number and types of vehicles have changed as a result of the fleet review and the reduction of $500,000 in the overall budget.
Q. So that the actual vehicles used for the averaging is different in 2005 budget than the 2004 budget? Is that correct?

MR. MARTIN:
A. Yes, that is correct.

Page 75

Q. Okay. Which is part of the explanation provided yesterday. You're taking an average of a different group of vehicles this year versus last year. But in addition to that, there was an error, as you've just corrected there on the bottom of page B-147? Is that correct?

MR. MARTIN:
A. Yes, and I'd like to apologize for the Board for that. Perfection is something we only strive for. Obviously we rarely attain it.
Q. The last undertaking is undertaking number seven found on page 190 of the transcript, and it related, on the bottom part of page 190, and it related to the transmission lines that Hydro plans to undertake in the 2005 Wood Pole Management Program. Are you in a position to respond to that now, Mr. Martin?

MR. MARTIN:
A. Yes, I am. The poles that are in the plan for next year, under the Wood Pole Management Program, are TL210. That's a 138 kV line from our Stoney Brook terminal station east to Cobb's Pond near Gander. That line was built in 1969. TL226 is a 66 kV line on the

Page 76

Northern Peninsula which was built in 1970. TL227, another 66 kV line on the Northern Peninsula built in 1970. TL243, which is the line connecting the Hind's Lake generating station to the Howley terminal station, that's the one we're proposing to replace all the COB insulators on as well. We would be inspecting 100 percent of the poles on that line next year, again as part of the economics or efficiencies, if you will, of doing all this work at one time. That line was built in 1978. And TL218, which is a 230 kV line from Holyrood to our Oxen Pond terminal station here on the Avalon. That was built in 1983, and again, that has been identified as a critical line. It was looked at or reviewed, if you will, as part of our upgrade program back when we did the steel transmission line upgrade. Were we going to upgrade that to the new ice loading and so on? The answer was no, but we do want to get out, inspect and test and treat the poles on that particular line, and that line was built in 1983.
Q. Thank you, Mr. Martin.

Page 77

MR. MARTIN:

A. Again, I think it's worthwhile to identify that's the plan of today. As the information is collected from this year's program and other information becomes available, the program will, in my mind, no doubt change. But right now, that's the plan that we have on the books right now for next year.

Q. Thank you, Mr. Martin. Mr. Chair, that completes all of the undertakings that have been provided by this panel.

CHAIRMAN:

Q. Thank you, Ms. Greene. We just have a few questions. Commissioner Powell will go first.

COMMISSIONER POWELL:

Q. Thank you, Chair. First, I'd like to compliment the panel on a very good presentation. I think the information is quite clear. I enjoyed going through it. I don't have any real detail questions, it's just a little bit of what I would call housecleaning. You described a bit of the process of how the budget is put together from the ground up. I'd just like to, for lack of a better word, see how it gets finished, and

Page 78

to indicate where I'm coming from, maybe Mr. O'Rielly can bring up page six of Mr. Roberts' testimony. Yes. Mr. Roberts, through his planning, which we'll deal with probably when he gets on the stand, he goes through the process and makes the assumptions that if nothing else changed that if this budget was accepted in total that it would mean approximately $1.7 million in new revenue, which is, if you did some simple calculations, it means that there's total revenue of roughly half of one percent. I'm just wondering, the process, when you put the budget together, you're part of the process, are you aware that this budget that you presented as part of the total that would require Hydro to seek more revenue from its customers, all else being equal?

MR. MARTIN:

A. Yes. Part of the discussions that we have at the executive level obviously centre around the total of the capital budget we're proposing, how it lines up against other years, the new revenue requirements that the budget would require, and that is a

Page 79

consideration, but it's certainly not the prime consideration in determining what capital budget we bring forward to the Board in any particular year.

Q. No. No, I appreciate that. So it does get finished off, in the sense you started at the bottom, in terms of people submitting it, processed right up to the top and you're--you finish the loop in terms of saying okay, go ahead, we know--we appreciate this. So my next question is: given that, and at the discussion level that, again the capital budget require $1.7 million and is there then the message sort of taken saying that if this in capital requires us to produce $1.7 million, on operations, we should be looking to save our portion of that. So in the scheme of things, when we present a operational budget, one would balance out the other?

MR. MARTIN:

A. No, I can't say it's done in that context, at least from my perspective.

Q. You don't feel any pressure then that you should--okay--any more than usual.

MR. MARTIN:

Page 80

A. Mr. Powell, every single day I go to work, there's pressure on the operational budget, I can assure you of that, and I think that's in the context I would respond to your question, that it doesn't necessarily flow from the capital budget. If we identify an opportunity for savings in any of these capital items or anything else that we can come up with regards to a new process that would be acceptable and also result in reducing our operating expenditures, then we certainly move forward on that and implement it. I can't say from a personal perspective that it's tied directly to the requirement for an additional $1. 7 million in revenue as a result of the 2005 Capital Budget.

Q. So when you sit around at the corporate level, top level, and deciding these things, there's no employed pressure saying that we'll accept this as the minimum capital budget this year, but there should be some sort of savings worth the system, whether it's a productivity type showing that sure, we'll spend this $40 odd million, your portion of it, that there should be a corresponding productivity results. So

Page 81

COMMISSIONER POWELL:
therefore, when we go to another rate hearing, it would wash out?
MR. MARTIN:
A. No, I can't say there is in that context. Like I say, there are pressures on our operating budget every single day.
Q. I appreciate that.
MR. MARTIN:
A. I'm sure you'll appreciate that, yes.
Q. Can I ask then, Mr. O'Rielly, if he would bring up the schedule on the application, Schedule D, page E-1. No, Schedule E, excuse me. There's only one. This is the capital expenditure budget 99 to 2008, and looking here at the 2005 and it shows that the $42 million and it shows at 2006 it's roughly the same. 2007 it's going to be backed off a bit, and in 2008, it looks like it's going to be a fairly soft year from a capital expenditure, and I realize these are projections and I realize that everything from Mother Nature on can change that. And when I go back and look at Mr. Roberts' testimony saying that the 2005 would mean an increase of 1.7, you can almost

Page 82

assume that 2006 would be roughly the same and 2007 would be something less. But 2008 would seem to be, you're going to have a lot of room for manoeuvring. So I'm just wondering when you did this planning out and the budget indicated that maybe over the next two years, with this 1.7, 1.3., .4, you're looking at roughly $5 million that any thought given to massaging this so it--and loading more of it in 2008, so it wouldn't be there?
MR. MARTIN:
A. I think there's--I'd like to respond with two points on that. First of all, I think you have to be very, very careful about the 2008 number, at least personally. The TRO budget of that component of that particular estimate is $7.8 million, and I have to be quite frank with you that I wouldn't put a whole lot of stock in the accuracy of that number. The further we get out in time, the less we know about what we're going to have to budget for. You know, the numbers in 2005 obviously are accurate based upon detailed cost estimates and so on. 2006, probably close to the same thing. 2007, as you suggested, a little

Page 83

softer. 2008, if I can be quite frank with you, we start to fall off the end of the earth with regards to the accuracy of these estimates in all the items that we've been able to identify out that far. So personally I wouldn't put a whole lot of stock in the $7.8 million for TRO.
I think your other point with regards to are we concerned about this and do we look at deferring things, the answer to that is yes. As these budget proposals come from the regions and are reviewed at the various levels, there are numerous proposals that, first of all, are decided well, they're not really capital items. They should be put in our operating account and then they show up in future years as operating projects. There are lots of other projects that are deferred, that we either don't think they're justified at this particular point in time or that they can be deferred. There's not a significant risk to the customer or so on, and they are pushed off to 2006, 2007 and perhaps even some to 2008. So that process happens, but it doesn't happen under--or I think in the way that

Page 84

you've described it, that we just looked at the 2005 budget, saw that it was $42 million, that we perhaps got some softer areas out in '07 and '08 and based on that alone, moved them out. The proposal that we brought before you this particular week are ones that we are convinced need to be done in the best interests of the customers in 2005.
Q. Is it fair to say a lot of the items in this budget, my first--when I read it without reading any of the testimony, I looked at the budget, except for a couple of projects, Rencontre East is one that comes to mind, but a lot of them are maintenance driven, trying to rehabilitate the system or just maintaining the system, and if you don't spend them now as a capital item, they may have to be spent tomorrow morning because things may happen. So it's just a question of timing and best--I wouldn't want to use the word estimate--best experience saying it should be done this year?
(11:30 a.m.)
MR. MARTIN:
A. I like to use the expression engineering judgment.

Page 85

COMMISSIONER POWELL:
Q. Yes, okay.
MR. MARTIN:
A. People in other disciplines sometimes don't like that particular phrase, but it's one we use all the time.
Q. Yes. So really it's not a question whether this money is going to spent. It will be spent whether it's 2005 or 2008 or '09, let's say.
MR. MARTIN:
A. Or tomorrow morning.
Q. Or tomorrow morning.
MR. MARTIN:
A. That's correct.
Q. And it may be spent plus additional money, if it's not spent in 2005, in 2008 because of -
MR. MARTIN:
A. Yes, we could be doing ongoing replacement of insulators, for argument sake, and spending dollars going back and going back and going back replacing onesies and twosies and threesies and all of a sudden next year now we get into a catastrophe and we got to go and replace them all. So what we're doing here is

Page 86

we're looking at the risk involved. We're looking at the results of inspections. We're looking at the results of tests that we conducted, and again, based upon our experience and knowledge and engineering judgment, we are recommending to the Board that these projects be done based on the schedule that we've brought forward.
Q. One other item that was referenced by your legal counsel, the method of--the Board outlined some guidelines for putting together budgets in P.U. 7, Schedule 3, and one of the conditions, condition nine, and we asked the Corporation to provide a description and related documentation outlining the results of any discussion of the project that have taken place between utilities in an effort to reduce expenditure, providing duplication of service or increased sharing of resources and expenses. Are anything in the transmission and rural operations that would have come under that category? And if so, are there -
MR. MARTIN:
A. There are a couple of items in the budget that we've had at least preliminary discussions

Page 87

with Newfoundland Power on. Most particularly, I guess, we not only talked to them, but we gave them a presentation on our proposed Wood Pole Management Program. My recollection of their response is that they were supportive of what we were proposing to do. They were going to help us in any way they could with regards to providing test results and information related to their own wood pole experiences out in the field, and depending upon the success of our program, as we move forward and report back to the Board and they see the results of the program, they may or may not be interested in either joining it or coming up with their own program or something similar to that. So that's one instance, I think, where we've shown some coordination.

I've also talked to one of the executives at Newfoundland Power with regards to our intention to buy this oil reclamation unit and Newfoundland Power had numerous power transformers on their system and many of them as old or older than ours, and we think it would be beneficial for them as well, once we

Page 88

get this piece of equipment in our own hands, that they could potentially use it to reclaim the oil in their power transformers, extend the life of their units as well. So that's just two examples that come to my mind where in this particular application there are proposals that we talked to Newfoundland Power with and hope to deal with them again in the future. Again, the idea being to try and keep the costs to the rate payer as little as possible.
Q. Good, thank you. That was one of the points of having the--in part of the order, so I'm glad to see that that's active, alive and well. One other little thing, when we were--I sat in on Newfoundland Power Capital Budget, you referred to as your sister utility, and one of the requests they wanted, I'm probably winging the words here, but essentially, the concept that when they sent somebody up a pole to do a job, something would have broke, had broken, and while they're up the pole, they may have done three or four other things that may not necessarily fit in their plan, but the cost of getting the equipment to the pole and

Page 89

COMMISSIONER POWELL:

getting somebody to get up the pole, whether it's a lightning arrestor or insulator or whatever, they did the other three or four things at that particular point in time. And they had a budget request for--I can't remember exactly what it was, but again, I use my words, and that's not the way to describe it, as a contingency to cover off putting those extra lightning arrestors or whatever it was, because they knew the probability things would happen. They had that actually in their capital budget, and they had the documentation proving that it was the least cost, efficient way of doing it. Is that a policy of Hydro, that once you go up a pole to fix something, if there's other things up there that in the scheme of things you may be planning to fix it in 2007, but since I got somebody up that pole, do it now?

MR. MARTIN:

A. Yes. I mean, generally speaking that is the policy of Hydro. If we go to fix a particular item and we find something else that's amiss or needs to be adjusted or even replaced,

Page 90

obviously it depends upon whether or not you've got the equipment and the materials available to carry out that particular repair, but assuming that we do, then we would obviously, in the interest of efficiency, do that particular piece of work at that time, certainly.

Q. I was thinking more so not that if something broke. I gather, reading what Newfoundland Power is doing, that you have all these insulators out there, you know that you're going to replace them all eventually.

MR. MARTIN:

A. Right.

Q. But there's a line down in southwest Newfoundland, to use the expression, something happens that you have to go in and fix it, and it may be something not related to the insulator. You can go up and fix that one thing, but since you're up on the pole, the insulator is going to go in a couple of years time, you might as well take that off and put one there now? I mean, is that--when you go to that pole -

MR. MARTIN:

Page 91

A. No, if I read you correctly, I don't think we would do that. I'm not saying one is right or wrong, but if we go up a pole to fix a problem and there's a COB insulator there, for argument sake, and during the inspection of that pole, the insulator hasn't failed, it's still in tact, it doesn't show any of the signs of the radial cracks we see, you know, leading to a defective situation on that particular insulator, then normally we would not fix it. The insulator is still there. It's performing its function, and I don't think we would replace it. Now I stand to be corrected on that, but that's my impression of what we would do. Obviously if we saw the cracks and whatever in the insulator, if it was sufficiently developed, that it caused our line workers or whatever, our supervisor, a concern, then we would obviously replace it at that time. But if the insulator was good, the inspection looked good, if it tested well, then just because it's a COB insulator that we may be looking at replacing in 2008 or 2007 in the program, would we replace it at that time? No, my feeling is that we would not. I hope

Page 92

that answers your -

Q. Yes. That was what I asked and you answered it. That's all the questions I have. Thank you very much.

MR. MARTIN:

A. You're welcome.

CHAIRMAN:

Q. Thank you. Commissioner Martin.

COMMISSIONER MARTIN, Q.C.:

Q. I think the questions I had coming in have pretty well been canvassed, but there is one fact that occurred to me, with respect to the price of oil these days and the way it seems to be trending up, has any thought been given to your Isolated Diesel Systems in terms of whether or not because of the change in economic conditions now, it would be viable to look at an off-oil program and perhaps connect some or all of these Isolated Diesels to the grid? Can you tell me if there's any thought given to that?

MR. MARTIN:

A. Yes, I'm sure, Commissioner Martin, there's been thought given to that. One of the functions of our system planning department is

Page 93

MR. MARTIN:

to continually review this, on an ongoing basis, to see whether or not there is justification for interconnecting any of these isolated rural communities to our system. Obviously the rising price of oil would be one of the impacts that they would be looking at on an ongoing basis. The particular project at Rencontre East, and I'm sure you're aware of this, is driven by the fact that we had an opportunity there to do something. The plant was destroyed. We could put the money either into an interconnection or a new plant, and that was, for us, a bit of a no brainer, if you will, but I take your point, and yes, our system planning department, which Mr. Haynes can perhaps discuss with you in more detail, they are always looking at ways and means that we could interconnect some of these communities and get them off diesel fuel.

Q. That was the only question I had.

CHAIRMAN:

Q. Mr. Martin, I wonder if you could just clarify for me, in relation to the Wood Pole Program on B-28, there's a couple of other projects,

Page 94

and I'm not quite sure, such as B-50 and B-66, B-50 relating to upgrading distribution systems, and that involves replacement of deteriorated poles, although I'm not quite sure what percentage of that particular project would relate to deteriorated poles, and I appreciate the B-66 project, the English Harbour West system, only involves 35 poles. But I'm just wondering, can you clarify how that deteriorated pole replacement relates to the project in B-28, the overall program?

MR. MARTIN:

A. Yes. The program that we're proposing under replace wood poles transmission on B-28 only refers to the poles on our high-voltage transmission system, the 69 kV, 138 kV and 230 kV transmission lines. So that's where we're focusing our attention initially. It has the biggest impact on the system with regards to reliability of the total system. So we're only, at this point in time, looking at the 26,000 wood poles on the transmission network.

The project referred to under B-66 is the replacement of deteriorated poles on the English Harbour West distribution system.

Page 95

They, no doubt, are on a 25 kV or 12 1/2 kV system and do not come under--they're part of the 75,000 wood poles I mentioned in our presentation that are on the distribution system, and they're not covered by our proposed Wood Pole Management Program.

Q. Does that apply to the upgrade distribution system? Obviously it does.

MR. MARTIN:

A. Yes. Yes, that's correct.

Q. Okay. With regard to the project outlined on B-54, upgrade distribution line L7 St. Anthony to Cook's Harbour, in the justification there, you conclude that "replacement of this section of line is expected to result in reducing the SAIFI and SAIDI indices for this system to a level closer to the Hydro average." When you say to a level closer to the Hydro average, marginally closer, moderately closer, substantially closer?

MR. MARTIN:

A. Again, it's--doing these what-if analysis, that we call them, it's extremely difficult to accurately quantify the expected improvements.

Q. So there was a what-if analysis done here, was

Page 96

there?

MR. MARTIN:

A. No, there wasn't. There are numerous problems on that line. We're looking at the phase spacing on the line. We're looking at installing mid-span poles, changing cross arms and so on. So typically where there's a multiple number of problems that we've identified as root causes for outages, it's really not practical or even sensible to go back and try to predict how much of an improvement you're going to see. Another important factor to remember about this line is our statistics as quoted only refer to what we call sustained outages. They are one minute or longer, and I think we did mention here in the justification that one of the problems we've seen on that particular distribution circuit is momentary outages, with regard to line slaps and so on. That is another important issue that we're going to correct by this problem that won't necessarily show up in the statistics at the end of the day, but the numbers, as you'll see, particularly with regards to the duration of

Page 97

MR. MARTIN:

the outages, the SAIDI at 30.13 on the top of page B-55, comparing that with the Hydro average of 11.9 or say 12, it's two and a half times the Hydro average. There is no doubt that these upgrades will significantly improve those numbers, but to what degree, we can't accurately predict.

Q. The final question I had, Mr. Martin, related to the air-conditioning systems in Whitbourne and Stephenville, and I have to confess, you know, I'd like to have some elaboration as to, you know, why your alternative methods of looking at correcting that system were not deemed to be appropriate, you know, in particular with regard to using the window-type air-conditioners or wall-mounted air-conditioners you might see? You know, they appear to be, you know, so common to see in office buildings anywhere around St. John's or the province, and I'm particularly interested as to why they were not appropriate or would not work in Stephenville or -

MR. MARTIN:

A. Well, as I understand it, I'm certainly not an

Page 98

expert in air-conditioning systems, so I'm speaking just from information I've gathered from others. As I mentioned before, we did try those in one or two of the offices out there. In the estimation of our engineering people, they were totally inaccurate. The people there still had to leave the room because of the heat. At times, the noise was unbearable. Out in the larger office areas, like where our clerks and our office administration people sit, out in the general office area, as I understand it, you cannot cover off the air-conditioning in an area like that through a window-type unit.

Q. How many square feet are you talking about there?

MR. MARTIN:

A. I believe we have that in the response to an RFI.

MR. HOLDEN:

A. IC-21.

MR. O'RIELLY:

Q. Could you repeat that?

MR. MARTIN:

A. IC-21.

Page 99

GREENE, Q.C.:

Q. Yes. No, it's not there. It's IC-20.

MR. MARTIN:

A. 20, is it? The general office area in Whitbourne is roughly 650 square feet. We also have a boardroom there of 344 square feet. In Stephenville, if I'm reading this correctly, the general office area is roughly 300 square feet, with a foray and corridor area and they are connecting into that, so that particular area is roughly close to 600 square feet.

CHAIRMAN:

Q. Okay, and I guess, are you indicating it's because of the configuration internally of the room that these outside air conditioners wouldn't be appropriate?

MR. MARTIN:

A. That's my understanding, yes.

Q. I have no further questions. Ms. Greene, anything arising?

GREENE, Q.C.:

Q. I have no redirect, Mr. Chair.

CHAIRMAN:

Q. Mr. Hayes?

Page 100

MR. HAYES:

Q. No, Mr. Chair.

CHAIRMAN:

Q. Mr. Hutchings?

HUTCHINGS, Q.C.:

Q. Nothing arising.

CHAIRMAN:

Q. Anything?

MR. COXWORTHY:

Q. Nothing, Chair, thank you.

CHAIRMAN:

Q. Okay. Fine, thank you, gentlemen.

MR. MARTIN:

A. Thank you.

MR. HOLDEN:

A. Thank you.

GREENE, Q.C.:

Q. Mr. Chair, our next witness is Mr. Haynes, the vice-president of production, who will speak to, at this time, to the Hydro plants and thermal plant projects. It'll only take a moment for him to get set up. Thank you very much, Mr. Martin and Holden. At this time, we do have a copy of a presentation that Mr. Haynes, or some slides that Mr. Haynes will be

Page 101

GREENE, Q.C.:
speaking to as we do his direct evidence.
(11:48 a.m.)
MR. JAMES HAYNES, SWORN
CHAIRMAN:
Q. State your full name for the record, please.
A. James Haynes.
GREENE, Q.C.:
Q. Mr. Haynes, what is your current position at Hydro and what are the responsibilities of that position?
A. I'm currently the vice-president of production, and the production division is responsible for six areas of Hydro. First of all, we look after the planning of any new generation, transmission or distribution systems through the system planning department. We also look after the operation and maintenance of the Hydro plant, which is-- I'm sorry, I should go back. With respect to the hydro generation, we look after Bay D'Espoir plant, Cat Arm plant and so on. We also look after the thermal facility operation and maintenance at Holyrood, and the energy control centre looks after the economic

Page 102

dispatch on a 24-7 basis of the main system grid, and the dispatch of the hydro and thermal generating plants. Also, the production division looks after the information systems and telecommunications department and they provide computing services to basically all of Hydro, hardware and software.
Q. Mr. Haynes, could you please identify what the pictures that have come up on the screen?
A. Sorry?
Q. The pictures, could you please point out what -
A. Oh, I'm sorry. The picture in the top left-hand corner is the hydro facility at Bay D'Espoir. That's the largest hydro facility that we have on the island, containing two power houses. In the bottom right-hand corner is the thermal plant at Holyrood, which is three generators and 466 megawatts. And I guess the other thing that's shown in that particular slide is just a typical microwave tower that we use in our cross-island communication system, and would likely be the host to some of the VHF radial systems as

Page 103

well.
Q. Those pictures just give a general indication of some of your areas of responsibility for Hydro?
A. That's correct.
Q. How long have you been with Hydro?
A. I've been with Hydro for 27 and a half years.
Q. How long in your current position as vice-president of production?
A. About three and a half years in this position.
Q. What were the positions you held prior to your current position?
A. Since joining Hydro in 1977 I've been in various positions in the operations, engineering and planning division sections of Hydro. Most recently--also at Churchill Falls for several years. And when I left, I was the general manager of that facility. And prior to that I was the director of plant operations and maintenance. Prior to going to Churchill Falls I was a manager of transition planning in the planning division, and prior to that a planning engineer, I worked in engineering operations and I worked for a little over two years on the construction of Holyrood unit No.

Page 104

3 in the late 70s, early 80s.
Q. And in your role with respect to Churchill Falls, I understand from your answer that you were responsible for the hydroelectric plant that's there?
A. The hydroelectric plant, that's a pretty broad job, actually. It's the hydro plant, the transmission lines, the terminal stations, transportation, airport, pretty well everything there, actually.
Q. And how large is the Churchill Falls plant?
A. That's a 5428 megawatt facility.
Q. It's one of the largest underground powerhouses in the world, is that correct?
A. It is the largest underground powerhouse in the world.
Q. Now, looking to the 2005 Capital Budget, looking here now at page A-1. What projects are you responsible in speaking at this hearing?
A. I will be speaking to the generation items under generation for 2005, as well, the--with the exception of the gas turbines at Happy Valley, Stephenville and Hardwoods which come under TRO. As well, I'll be speaking to the

Page 105

MR. HAYNES:
IS and T sections of the general properties, they also come under the production division.
Q. Okay. Before we get into the specific projects, I wonder if you could please just describe, as Mr. Martin did for his system, take the Commissioners through the system that you are responsible for?
A. Okay. This slide is just basically a repeat, I guess. We were referring to the hydro plants that come under the production division. As I've mentioned before, it's Bay D'Espoir. There are several others which I'll describe shortly. And the thermal facility which obviously the primary one that I look after is the facility at Holyrood which is a fairly big piece of our generation portfolio and a very critical one, I might add, and as well as the communications and the corporate communications and computing facilities also come under production division. So, with respect to the system map, just got to get this cursor to work. Excuse me. There it is. Basically with respect to the transmission grid, the transmission system basically we

Page 106

have hydro plants at Bay D'Espoir, which is 580 megawatts and 2635 gigawatt hours. We have Upper Salmon, which is 84 megawatts and 541 gigawatt hours. And we have Cat Arm, which is 127 megawatts and 735 gigawatt hours. Hynes Lake, which is connected to the 138 grid that Mr. Martin was describing is 75 megawatts, 340 gigawatt hours. And our newest hydro plant, of course, is Granite Canal, which is in service and operating well now at 40 megawatts and 224 gigawatt hours. That's the hydro plants. We have some smaller ones at Paradise River and Snooks and Venans. And, of course, Holyrood, which is on the Avalon Peninsula, which is the biggest generating source on the Avalon is 466 megawatts and we plan for 2996 gigawatt hours per year. With the exception of Granite Canal, which is a new one, most of this equipment is in excess of 25 years of age. And we must invest capital to insure it remains reliable and at the most reasonable cost to serve our customers' needs and to ensure reliability is--that we are dependable in our delivery of power and energy. As well for the energy control

Page 107

centre, which is slipped in there in the slide presentation, that is the arena where on a hour basis the generation is turned on and off or scheduled from the point of view of how many megawatts comes from where. It also looks after the voltage regulation on the system and dispatches transmission lines, responds to customer outages or equipment outages and facilitates the planned outages of lines and plants to ensure maintenance is done and also to ensure that there's a minimum interruption or disruption to our customers. Lastly, I guess, across the island, which we have not indicated, there is a communications system. The backbone communication system is a microwave radio system and of course we maintain the VHF radio system so we can communicate with our workers and the plants or field crews doing the various maintenance, both routine and emergency that basically happen on a daily basis.
Q. Mr. O'Rielly, could you bring up, please, page A-4? Here, Mr. Haynes, beginning on page A-4 of the application we see the breakdown of the projects under Hydro plants. That's where the

Page 108

listing starts. And could we go to page A-5, Mr. O'Rielly? Here on page A-5 we see the similar listing of projects for the thermal plant which is Holyrood. Were the project descriptions that are contained in Schedule B for each of these projects that are over $50,000 prepared under your direction?
A. Yes, they were.
Q. Do you accept them as your evidence for the purpose of this hearing?
A. Yes, I do.
Q. Evidence was pre-filed on August 10th for production. Do you wish to make any changes to the evidence at this time?
A. Yes. There were two minor corrections I would like to make in the pre-filed evidence. Firstly, on page 2.
Q. Page?
A. Page 2 if I could first, I'm sorry. On page 2 in the table it indicates that the Stephenville gas turbine is 25 megawatts installed capacity. It's, in fact, 54 megawatts. I apologize.
Q. So that was just a simple typo or anyway, it was a mistake?

Page 109

MR. HAYNES
A. Yes.
Q. The 25 shown for Stephenville for installed megawatts should be 54, is that correct?
A. That's correct. And the second correction is on page 7, line 27. And at line 27 it indicates that the expenditures during 2004 were $3.1 million. That is, in fact, the expenses up to the end of 2004. There was approximately $387,000 spent on that approved project, I'm sorry, in 2003. So it's just replace the word "during" with "up to".
Q. So that's on line 27, replace the word "during" with "up to", is that correct?
A. That's correct.
Q. With those two minor amendments, do you accept your August 10th evidence as just amended as your evidence for the purpose of this hearing?
A. Yes, I do.
CHAIRMAN:
Q. So replace the word "during" on line 27?
GREENE, Q.C.:
Q. Yes. With "up to".
A. Yes, "up to". It's up to the end of 2004 we would anticipate.

Page 110

CHAIRMAN:
Q. I see. Sure, yes.
GREENE, Q.C.:
Q. The money wasn't all spent during the year, it's been spent prior to and during.
CHAIRMAN:
Q. Okay. Thank you.
GREENE, Q.C.:
Q. Mr. Haynes, you were present when Mr. Martin testified and explained his role as vice-president at Hydro in the Capital Budget process. Is that a similar role to your role as vice-president of production?
A. Yes, that basic process is pretty consistent throughout Hydro.
Q. Mr. O'Rielly, now could we go to page A-4, please? And which we're going to start looking at the specific 2005 capital projects, work production under the heading here of "Generation". The first heading is "Hydro Plants". What type of projects are in this category?
A. For the construction project grouping there, with the exception of the fuel tank replacement, they are projects directly

Page 111

related to the age of facilities and they're intended to ensure continued availability to meet our customers' needs reliably and cost effectively. The fuel tank proposal is a regulatory requirement which will bring these fuel systems up to compliance with legislation so we can get the necessary approvals and registrations in place from the provincial regulator.
(12:00 p.m.)
Q. Now, there are two significant projects there under that heading of "Construction Projects" under "Hydro Plants" that I'd like to talk--or you to give evidence with respect to. The first is the Slope Stabilization Project for Upper Salmon. Could you please describe that project, Mr. Haynes?
A. Yes. I'll just use the slide. This particular picture on the screen right now is a picture of the Upper Salmon development. And over in the top right-hand corner where the cursor is right now is a general area of concern that we have, and it's basically a slope stability issue with the power canal. This canal is used to direct water to the

Page 112

plant from Cold Spring Pond. This structure is approximately 21 years old. And there were issues during construction with respect to that slope and there's been a fair bit of time and effort spent looking at it, doing some small operating remedial work in the sense of berms and so on. And it's been a growing concern with our Dyke Board, who are a group of national consultants, basically, who come in once a year to oversee our dyke safety and maintenance program to give us suggestions, to give us advice on how to properly ensure that they remain safe, intact and do their job in the long term. The particular project was approved in 2004 and the 2004 work is basically to do an engineering review to come up with a permanent long-term, long-lasting solution. The particular issue and more, I guess, this particular--this is the item of concern, it's about 400 feet along this particular canal and this is a fairly steep slope. It's 40 meters--excuse me. It's approximately 40 meters higher than the water, although it doesn't quite look like it on the screen, but that is the actual height. It's

Page 113

MR. HAYNES:
fairly wet. And what happens is that there are issues with respect to the slope stability. And the fear is that eventually that this particular slope will slide into the canal, block it off, possibly undermine the other bank which would cause a loss for a considerable of time. This is a more specific shot just looking at the actual slope. And you can see these particular lines here where there's some shifting or the geotechnical term may not be sliding, but sort of sliding or sloping of the dyke material into the canal. So this particular project is in our view very important to retain the integrity of the dyke in the long term, to prevent a failure and as I said, the Dyke Board has been particularly engaged in the last number of years. In fact, they've mentioned it in their reviews on several occasions in the past, some, quite a number of occasions. And I guess this last review I guess we have concluded that we really need to take a hard look at this and to remediate the particular work. The situation with Upper Salmon, I should add, is that it is

Page 114

a sort of run of the river plant, it's behind Bay D'Espoir. Most of the water that gets turbined at Bay D'Espoir goes through Upper Salmon. If that plant is rendered unavailable because we have a slope failure, we would have to spill around Upper Salmon plant, so--and when we spill around, we won't lose the water from Bay D'Espoir, but we won't have the opportunity to generate that particular turbine, that water. And that particular plant average in a year displaces approximately 850,000 barrels of oil. If the outage was for six months, then basically it would be, you know, 400,000 barrels of oil which obviously is a considerable cost factor to Hydro. So, what we propose to do, and this work is ongoing as we speak, is to define the solution. The estimate that we put forth in the Capital Budget was as phrased is a preliminary one. It's under review as we speak, again. And what we want to do is do a planned methodical repair and not be pushed into the corner and have to do an emergency repair in the middle of the winter, which would be not a very opportune time to do this

Page 115

kind of work, and quite possibly impossible to do it at that time of the year, which would extend the outage. So that's that particular slope stabilization project.

Q. Now, Mr. O'Rielly, could you return to page A-4, please? The second significant project that's there under the heading of "Construction Projects" is the--that I'd like to speak about at this time is the replacement of the Penstock for Snook's Arm where there is a proposed capital expenditure of 115,000 in 2005 with 1.8 million in future years. Could you describe that project for the Panel, Mr. Haynes?

A. Yes. The Snook's Arm plant was acquired by Hydro in 1967 or '68, I believe. It's a small 590 kilowatt plant, it's still used and useful, it does displace oil. The plant is located in approximately this area right here. The actual reservoir is up here and a penstock more or less follows this road down through this housing area and so on. So the plant itself is approximately 50 years old, and as I mentioned, it's still economic and does justify the work planned, in our view. The

Page 116

wood stave penstock, it's leaking, it's very deteriorated, runs through the community, which poses obviously some safety aspects which we are very cognisant of. Continuing to operate the plant as it is right now is not an option. And the $1.9 million that we have budgeted for the whole project is a two-year project. In 2005 we want to do a--we plan to do an engineering review and to define the scope of work and to bring this basically to a point where we can move on in the most cost effective way. The penstock itself, this is just a collage of pictures of the penstock. It's a typical, I won't necessarily say old fashioned, but it's typical wood stock penstock that's been around the system for years. This is called brooming. These steel bands basically kept the wood staves together. It's I think a two by four inch Douglas fir is the material. It is 50 years old, so this is not an uncommon--you see the brooming. On this picture right here you can see there are metal plates pushed in various places and under--for instance, right here is one here that are pushed under the steel band to secure

Page 117

MR. HAYNES:
a leak, to keep the wood in, to keep it, I guess for lack of a better word, to keep it together. In the lower right-hand corner you can see some of the novel repair techniques that some fellows use when they're desperate. It's basically they've driven nails in. That's not a great way to do it, but I guess at the time, this has been done for a number of years by various people, I guess, and so on. But that is not an appropriate way to do it. There is really no appropriate way unless you take it apart. You see the deterioration of the wood here as well. And obviously in the far right there is a fairly significant leak. In the wintertime these things ice up as well, which cause other issues, and some stresses, if you will, on the penstock. If it ices up too much, there's a tendency to tear it apart. The centre photograph, I just wanted to, just to indicate the location of the penstock with respect to some of the houses. So while it's not a major concern to be adjacent to that houses, per se, it certainly is a major issue for us with the deteriorated condition of the

Page 118

penstock. If there were a leak to happen, it would cause property damage and obviously safety issues with the local residents. So, we have looked at the option to, you know, to retire the plant in our study which was provided in the tab G, I believe, and the least cost alternative is to basically replace the penstock and the levelized cost that we've calculated over the long term is approximately six cents a kilowatt hour and the alternative is approximately 7.6. So it's basically based on economics that it's still a used and useful plant and it's prudent to replace the penstock and continue this operation. And there are obviously environmental benefits as well, it's less oil, albeit a small amount compared to what we'd normally burn.

Q. Mr. Haynes, you mentioned the alternative of not replacing the penstock and taking Snook's Arm out of commissioning. The alternative was 7.6 cents per kilowatt?

A. Yes, that's correct.

Q. What did this alternative include?

A. That includes basically replacement energy from the Holyrood facility which is in excess

Page 119

of about 5000 barrels a year. It also includes a capacity item, because while it's 590 kilowatts, it is part of our portfolio, it is used in the calculation of our system, you know, reliability criteria for generation, which is loss of load expectation which is discussed often times during our general rate applications as well as the retirement costs of the Snook's Arm plant. We just can't walk away from a facility. If we retire any plant or any physical facility, we have to demobilize the site, we have to also get permission from the Public Utilities Board, of course, but in addition to that we have to get approval from the Environment Department because there is a powerhouse, there's a penstock, there's also a dyke and dam that would have to be retired from service and I guess the Department of Environment would dictate what we have to do. So we have allocated monies that in our estimate would cover off that in the, I'm sorry, the -

Q. Retirement option?

A. The retirement alternative. Thank you.

Q. Mr. O'Rielly, I wonder could you go, please,

Page 120

to page A-5? Here we see the breakdown of the projects that are under "Thermal Plant". What types of projects are listed here under "Thermal Plant", Mr. Haynes?

A. In the thermal plant section there are two capital intensive projects and they are age related. One is the continuation of the control system upgrade, which is actually in progress as we speak. The other projects which we are proposing to start on in 2005 is the upgrade of civil structures, which basically is a--similar to the job that we did last year, which is basically to replace the liner in the chimney or the stack and the steel works and gradings in the cooling water structure which basically is the salt water intake for cooling water. The other project that's there, a significant project of $750,000 is an anti-fouling system for the cooling water system. And that particular system will prevent the accumulation of muscles in the condenser and the cooling water system which cause us efficiency losses, cause us to derate the unit over the winter over periods of time until we can backwash and

Page 121

MR. HAYNES:
occasionally get in and actually shovel it out, although that is a little bit rare during the winter, but it is possible. So this particular system is based on economics. It's a new system that we do not have now. And this plant is, as I mentioned in the previous, some previous words, it's a very critical part of our portfolio and we're striving to make sure it's most efficient as we can and reliable as we can. So this is a--and the economics basically justify this project as well.

Q. Now, that was a brief overview of the types of projects. I wanted to look at three of those in a little bit more detail. The first is the control system that's indicated there. Could you please describe that project which is a multi year project that we're more than halfway through, is that correct?

A. That's correct.

Q. Okay. Can you please describe that project?

A. That particular project, maybe I can just go to the next slide? This doesn't have a lot to say to the control system. But the Holyrood

Page 122

facility which you see there is a pretty complex creature to operate. And I know that we've had some of the Board members out there previously and Board staff to view that particular facility. The control system is basically what allows the operators to operate that plant on a 24 hour basis. And the control system was approved last year and is well under way. The Units No. 1 is operating as we speak with the new control system. Now, they are still doing some tuning of that system. Unit No. 2 will be completed by, I believe it's the first week of November or the second week of November. And during 2004 we will spend approximately $1.6 million of the roughly $2.6 million budget, and for 2005 it's a continuation to do the same thing for Unit No. 3. And basically it's a critical component, it was forced--we were forced to change that out because of obsolescence of the old equipment. And if we want to continue to reliably operate that plant with less failures and unplanned interruptions, then we must continue to replace that particular piece of equipment. And I guess as I mentioned, by the

Page 123

end of this year when No. 2 is completed, which will be November and all the things are issued, we will have spent the $1.6 million of the 2004 budget approval.

Q. The second significant project for the Holyrood thermal plant you referred to already, it's the anti-fouling system for the cooling water system at the Holyrood plant. Could you please describe for the Commissioners this particular project?

A. Yes. I mentioned a few minutes ago, it's based on economics. But I guess I'll just--a couple of pictures of the specific issue. Our cooling water intake, if I go back to--if I go back to this slide right here and I can get my cursor back, the cooling water intakes are right here. This is the intake for Units No. 1 and 2. And this over here is the intake for No. 3. And while you don't see it, this is Indian Pond, which is connected to the ocean to a trestle just right here. So we basically take sea water in and run it through the condenser and then basically we discharge the water up through here. This particular picture is you got the intake and it goes on

Page 124

through the condenser system is that we get, particularly at certain times of the year, an extreme accumulation of muscles. This is the walls of the pipe at the cooling intake. That goes on through and the muscles actually are, you know, our delicacy in some people's eyes, anyway, sticks to this thing. It affects the efficiency of the condensing process. And it jeopardizes reliability in a sense that--or availability, I should say, in a sense that we have to derate. In fact, I think in--I shouldn't say I think. In 2003, for example, we would actually have gone in during the operating season 73 times and done backwashes on the condenser. When we do a backwash, we have to run back on load. So that has to be coordinated with the energy control centre, other hydro generation has to be on, and all these things affect our kilowatt hours per barrel, which I guess is our measure at Holyrood.

(12:15 p.m.)

So this particular project is approximately $700,000 and the payback is less than ten years and what the copper ion injection will

Page 125

MR. HAYNES:
do is prevent the accumulation and the growth of these muscles, so we should maintain a higher efficiency. It doesn't mean we won't have to backwash, but it should not be 75 times, it should be considerably less. And basically it will maintain the condenser efficiency which maintains the vacuum on the turbine and allows us to do a more efficient process. And these particular slide, by the way, are from Holyrood, they're not--muscles are often a problem in many other utility seawater intakes and this is not an uncommon problem. And the particular system that we're proposing is a, you know, five years ago it was a new system, or ten years ago it was a new system, but it's being adopted by utilities fairly often now and we think will pay for itself very quickly.

Q. The last project in this category for the thermal plant I wanted to address in direct evidence is the upgrade of the civil structures at the plant. Could you please describe that project?

A. Yes. That particular project we have there is

Page 126

the replacement of the stack liner and the cooling water intake screen structure at the Holyrood Unit No. 2. During 2003--I guess in 2002 we did the preliminary engineering on how we're going to approach this particular problem. And we did actually carry out that work in 2003. And what we have here, just to demonstrate, is the actual screen structure that we did have. These are just basically holes that are burned through the steel where the steel is eroded. Similarly, right here this particular piece is a section that was removed and laid down. It's just the long section is rusted, deteriorated. And these holes and weak spots, it used to be a quarter inch steel plate and these particular, not all necessary punctures because we have over the years gone back several times and done, many times and done repairs. We would put in a, weld in a new piece of steel, but after 34 years of operation it's been deteriorated to the point where we had to go. In fact, the actual condition of the liner in No. 1 was worse than we anticipated, because we had anticipated actually reusing a part of the

Page 127

upper part, which was stainless steel, and in fact, we had to replace it all. And so this is basically it's a continuation to ensure the reliability for that in the coming future. In the bottom left just to indicate how we did it, which may not be the way we're going to do it next time, because this particular crane is apparently, we understand no longer available in the province, this is a pretty high stack. I can't quote the number offhand, I forget. But basically we removed the old section up through the top and we installed it down through. That normally in most--where a crane is not available you actually do it from the inside. But that will be determined over the course of time as we tender the project and see what the vendors actually come up with. The issue with not doing it, I guess, it's a safety issue, obviously it's a reliability issue and safety issue. If the internal steel column were to collapse during operation, the exit gas has to go somewhere. Obviously if this thing falls down inside, there's lots of safety issues, but if the boiler is going, the gas has to escape. The boiler will shut down

Page 128

automatically when the boiler pressure goes up, but there's still exit gas in the fireball that has to be looked after and there is a possibility it could jeopardize the availability of the whole plant, not just that particular unit. And one of these units, No. 2, is 175 megawatts of our winter capability and it's critical that we make sure it's available for our customers' needs.

Q. So the pictures on the screen that we have there before us are pictures of the liner that was removed from the unit that has been done, is that correct?

A. These two on the top are and the lower right-hand corner are the liner that was removed. On the lower, right-hand corner these are the replacement sections. That's, I think, it's insulation and this, you can't see it very well but that one there would have the insulation around it as well. This is insulation. This is insulation that's up here which has also been deteriorated in certain places.

Q. And I believe you've indicated the condition of the liner that was removed from the other

Page 129

GREENE, Q.C.:
unit was actually worse than had been originally thought, is that correct?
A. Yes, it was, worse than we'd anticipated when we actually sought approval to replace the stack. And it's 34 years old, operating in a salt environment with hot exit gases which are, you know, do have obviously, you know, acids and so on.
Q. Do you have any reason to believe that the condition of the No. 2 liner would be any better condition than the other unit?
A. No. They were built at the same time and they have roughly the same operating experience. We would anticipate no significant difference in the conditions.
Q. Is it fair to say that an in service failure of that liner would be considered to be a major serious event affecting the reliability of the Holyrood thermal plant?
A. Certainly. As I mentioned, it's a safety issue. If it does collapse, you cannot--you know, we would not consider continuing use of the unit with out the steel liner. It would deteriorate the concrete section of the stack

Page 130

and the replacement costs would be considerably more. It would also render the unit unavailable for an extended period of time. You know, we are trying to be proactive and to propose these, you know, significant capital replacement projects to ensure availability. And any failure of 175 megawatt unit, you know, that would be, put this machine out of service for months. And in the winter that would be a considerable nuisance to all our customers.
Q. I think it would be more than a nuisance, would it, Mr. Haynes?
A. It would be, you know, outages and -
Q. Speaking as one of those customers.
A. Trying to be--there would be outages and maybe some--we would not be able to meet peak load very well or reliably because, you know, we plan the system, as I mentioned on this, a loss of load expectation. So all these things are a part of our portfolio. We have assumed failure rates and so on which all go into the--or availability rates, they all go into the calculation of our ability to meet the load. And if we were to pull 175 megawatts out of

Page 131

our system and that were gone tomorrow, we would be back here the day after tomorrow seeking approval to come in and do something, replace it with other generation, because we would be well outside of our planning criteria.
Q. Thank you, Mr Haynes. That concludes the direct evidence for Mr. Haynes at this time. And you will recall in the opening statement yesterday morning I indicated our plan is to deal with the hydro and thermal plant projects that are shown on pages A-4 and A-5 at this time. And then we would follow that with a panel where Mr. Downton and Mr. Dunphy would join Mr. Haynes only for the radio project. So the intent at this time is to do all of the hydro and thermal plant projects and that's what was spoken to in the direct evidence so far. Thank you. That concludes the direct evidence portion of this part of the -
CHAIRMAN:
Q. Fine. Thank you, Ms. Green. Mr. Hayes, I guess with respect to cross-examination we'll wait until after lunch.
MR. HAYES:

Page 132

Q. Mine is going to be brief but it's probably just as well.
CHAIRMAN:
Q. I think so. Even if it will be brief, I think we'll wait until after lunch. So we'll--just an hour break and reconvene at 1:30. Thank you.
(BREAK - 12:23 p.m.)
(RESUME - 1:35 p.m.)
CHAIRMAN:
Q. I think, Mr. Hayes, when we adjourned, you had one question, I think you indicated you had?
MR. KENNEDY:
Q. Chair, if I could just jump in for just a second. There was two pieces of information we just needed to enter in on the record.
CHAIRMAN:
Q. Very good.
MR. KENNEDY:
Q. And one is the power point presentation that Mr. Haynes was using in his direct testimony earlier today. And this needs to be entered in as an exhibit and it would be Exhibit JH No. 1.

Page 133

CHAIRMAN:
Q. JH 1?
MR. KENNEDY:
Q. Yes, correct JH No. 1. And the second item, Chair, is a letter from Grant Thornton, the Board's financial advisors. It is confirmation of them conducting a review of the calculations involved in the determination of Hydro's rate base. And the letter is self-explanatory. Copies have been distributed to all counsel for the parties. And that would be entered as Information No. 1, Chair.
CHAIRMAN:
Q. Thank you, Mr. Kennedy.
MR. KENNEDY:
Q. Thank you. That's all I have, Chair. I believe Ms. Greene has a document to enter as well.
GREENE, Q.C.:
Q. Yes, Mr. Chair, I do. This morning Mr. Hutchings asked for the reconciliation between the cost benefit analysis for the Roddickton mini hydro plant and the Snook's Arm plant. And we have the actual formula here for the calculation with the explanation of the

Page 134

difference which relates to the difference in the size capacity of the two and the capacity factor for each of those. So this is the formula for each of them. And Mr. Haynes is prepared to answer any questions if there are additional questions arising after this document is filed.
CHAIRMAN:
Q. Thank you.
GREENE, Q.C.:
Q. We've titled it as a response to an undertaking.
CHAIRMAN:
Q. I take it that was No. 7 then if it was formed in that fashion, is it, or 8, is it?
GREENE, Q.C.:
Q. It would be No. 8.
CHAIRMAN:
Q. No. 8.
GREENE, Q.C.:
Q. There was 7 from yesterday.
CHAIRMAN:
Q. Right.
GREENE, Q.C.:
Q. And some of them are verbal and some of them

Page 135

are written, so there won't be a piece of paper for each undertaking, but this is actually the eighth undertaking.
CHAIRMAN:
Q. It's going to be Hydro 8, is it? Mr. Hutchings, did you have any follow-up question arising out of this particular filing?
HUTCHINGS, Q.C.:
Q. I'll have to take some time to look at that, Mr. Chair, and we'll let you know then.
CHAIRMAN:
Q. Right. Mr. Hayes?
MR. HAYES:
Q. Thank you, Mr. Chair. Good afternoon, Mr. Haynes. Mr. O'Rielly, perhaps I could ask if you'd bring request for information NP-01 NLH on the screen? Mr. Haynes, Newfoundland Power's question, this refers to the Snook's Arm project, the replacement of the penstock. And Newfoundland Power's question in NP-01 asks for the levelized cost of production at the plant. And you've provided an estimated levelized cost of six centre per kilowatt hour. We also asked that you include in your analysis any material costs associated with

Page 136

the refurbishment or replacement of facilities or structures over the next 10 to 15 years. Hydro's response didn't provide any detail on the timing of future expenditures of capital expenditure other than the proposed penstock replacement?
A. No, we did not.
Q. And the only other expenditure specifically mentioned in the response are runner maintenance costs and O & M costs, presumably those are the only other costs that would have figured in your calculation of six cents per kilowatt hour, is that correct?
A. That's correct.
Q. So is it then Hydro's engineering judgment that there are no other significant capital expenditures on the Snook's Arm plant foreseen in your study period?
A. We don't have any capital costs in the foreseeable future for the Snook's Arm plant. The question was asked and basically the equipment is in pretty good condition even though it's old, parts are still available for most components.
Q. Thank you. Those are all my questions on the

Page 137

MR. HAYES:
production projects, Mr. Chair.
CHAIRMAN:
Q. Thank you, Mr. Hayes. Mr. Hutchings?
HUTCHINGS, Q.C.:
Q. Mr. Coxworthy will be proceeding firstly with this witness.
MR. COXWORTHY:
Q. Thank you, Mr. Chair. Mr. Chair, if we could start with project B-5, the slope stability at Upper Salmon power canal? Good afternoon, Mr. Haynes. The project description for this had indicated in the last paragraph on B-5 that the Acres International report engineering study had been expected to be completed by late August of 2004. Has it been completed?
A. No, it has not.
Q. This is part of, I think you mentioned this morning, you're still in the process of defining the solution?
A. Yes.
Q. Is there an expected receipt date now for that report?
A. We're expecting it, well, we'll certainly have it before the year end, but we expect it in

Page 138

November at the latest.
Q. Had it been anticipated originally that that report would have been available for presentation to the Board for part of these filings for the approval of the second phase of the project?
A. It would have been--we did anticipate when we wrote the budget proposal B-5 it would have been available. There's a fair bit of discussion on the go. You know, there's a fair bit of geotechnical evaluation involved and it took longer than expected.
Q. What evidence is there before the Board to support the approval of the one million dollar expenditure in 2005 even as a preliminary estimate?
A. I guess well, the evidence before the Board basically is contained in pages B-5 to B-8, which basically summarize the discussions and the concerns the Dyke Board, which are a group of experts in dyke and hydraulic plant design, and they've expressed concern on, I believe, on 14 different occasions over the last number of years with respect to the slope stability and increasing concern the last couple of

Page 139

years which has basically initiated action on our part to settle this issue, to solve the problem, I should say.
Q. Has the Dyke Board either proposed or suggested what the solution might be let alone an estimate of the costs for that?
A. One of the solutions or the solution proposed by the Dyke Board is contained in the justification for B-7, and that obviously is being considered by Acres and Hydro and the Dyke Board from the point of view of what the appropriate design solution is.
Q. And the second part of the question that's been--have there been any estimate, even preliminary estimate by the Dyke Board of costs for that?
A. The Dyke Board typically would not provide estimates. They provide technical guidance to Hydro, they raise concerns about different things that we're doing with respect to our dykes and basically the estimates are Hydro's estimates at this point in time. The report that will be completed by Acres will include more definitive number estimates and construction techniques for this job.

Page 140

Q. Has there been any Acres input into that million dollar estimate?
A. No, there has not.
Q. If we could turn then to the response to RFI IC-50, which is the Agra Monenco 1999 report that is referred to by the Dyke Board in the project justification excerpt that you were just referring to? And if we could turn within that document to page 2? Sorry, if we could start with page 1?
MR. ALTEEN:
Q. I don't believe it's available in electronic.
MR. COXWORTHY:
Q. Okay. The document, I'm not sure if it's been made available to the Board in hard copy, but it is a report that is attached as part of the response to IC-50. In the first part of the report there's a table of contents, a first page introduction and methodology. And then moving on to the second page under the "Results and Discussion" area. Do you have that before you, Mr. Haynes?
A. Yes, I do.
Q. Looking at the last paragraph of that Results and Discussion section indicates, "These

Page 141

MR. COXWORTHY:
results indicate that for the assumed conditions and geometry the lower slope of the left side of the canal may be prone to shallow failure as the ground water table approaches the surface. During the normal operations it is estimated that on average 70 percent of the slope is submerged. Similarly for the assumed conditions in geometry a larger failure involving an upper slope of the left-sided canal appears unlikely unless the ground water table approaches the surface." And then it goes on to say, "The piezometric data collected to date suggests that the ground water levels up the slope of the left dyke remain below the surface." Although, at that time anyway there was only one piezometer in the area. Has there been any subsequent evidence gathered since 1999 or whenever this data that supports this report was gathered that would refute the assessment of Agra Monenco that a larger failure involving the upper slope is unlikely and continues to be unlikely?

A. There have been additional piezometers

Page 142

installed at the site and there have been, I don't think I can refer to here, there have been water levels actually above the level of the canal levels recorded in that particular area. The other thing that we should remember is that the dyke's concern is that any change in the sloping of the dyke will undermine the core material in the dyke and may cause a rupture or failure of the north side, which would be catastrophic from the point of view of the plant.

Q. The type of catastrophic failure that you had described indeed in your presentation where you might have a large amount of material actually enter into the canal and perhaps even undermine the other side of the canal, wouldn't that be a failure that would involve failure of the upper slope as well as the lower slope?

A. Possibly. But any failure, even on the lower slope, would actually expose the core material of the dyke, which would be basically a muck at that time, would wash away when the dyke--when the canal is in operation and possibly erode or cascade to the other side.

Page 143

Q. There's a reference in that paragraph I just read from the Agra Monenco report to what they call shallow failure. And they identify at least in '99 that is perhaps a more likely risk at that time than was the failure of the upper slope, and this would be shallow failure, as I understand it, in the lower slope. Are you able to give us some sense of the consequences of a shallow failure in the lower slope and how that ought to be weighed as a relative risk as opposed to what appears to be the less likely failure of the upper slope?

A. I'm not exactly sure the distinction between a shallow failure. I'd have to go back to the expressions of concern expressed by the Dyke Board, who have been quite adamant that we need to act on this particular dyke to ensure that it remains useable and safe to operate. Their concerns are with any failure of the dyke because they can cascade very easily to other--to the north side or impair the operation of the power canal itself.

Q. Just ending off the questioning then with respect to that "Results and Discussion"

Page 144

section and that particular paragraph which I read in. Is there any reason to think the situation has changed since 1999 from what is described in that third paragraph under "Results and Discussion"?

A. I guess in the opinion of the Dyke Board in what we've put in the actual justification, they are very concerned. I should add that in the report, the review that's being done now the total failure mechanics and cost to remediate is being reviewed by the Dyke Board and by--well, by Acres initially.

Q. Has the Dyke Board relied on any information or opinion apart from the Agra Monenco report, the 1991--1999, I'm sorry, report that we're referring to here?

A. I should--the Dyke Board itself is comprised of four technical people who are involved in dyke and dam hydraulic structure construction for many number of years with many years of experience. They visit, I will not say that the visit Upper Salmon power canal each and every year, but I would suggest that they've visited usually, occasional we get weathered out because of wind or rain or whatever. But

Page 145

MR. HAYNES:
they have visited the site on numerous occasions, 14 times in the last, I don't recall the number of years, but they have mentioned the concerns with the stability of this particular slope. Last year they elevated to a much higher level of concern and we respect their concern and that's why we've undertaken this particular proposal.
Q. Moving on them in the 1999 Agra Monenco report under the "Recommendation" section which is at the bottom of page 2. It's the same page from which I just read the passage under "Results and Discussion". There are a number of recommendation that were made by Agra Monenco there which continue on into the next page which appear to be primarily for the purposes of gathering additional data, presumably that would be useful then in deciding what sort of solution should be affected. Have all of those recommendations been followed?
A. The additional piezometers have been installed. I cannot specifically say 100 percent, but I would suggest that most of these have been undertaken. And the Dyke

Page 146

Board, usually these things are written up by the Dyke Board and they review these on an annual basis to look at the changes in the slope. And as the slides indicated this morning, there is some shift in the cracking that you saw on the top side of the particular dyke.
Q. You said this data would have been provided directly to the Dyke Board?
A. The Dyke Board review all the information with respect to the operation of our dykes and dams.
Q. Is there any reference to their having, and I don't know if it's in the excerpt you provided, if it is, perhaps you could point it out to us, but is there any reference in the dyke report to their analysis of this additional data, data that's additional to what Agra Monenco had the opportunity to look at in '99?
A. It's not in the justification, but they make an annual visit to our dykes and dams, so it would have been done.
Q. The justification, is that just an excerpt from a larger report that the Dyke Board would

Page 147

have prepared with respect to the Upper Salmon?
A. The Dyke Board prepare a report on basically all our dykes and dams more or less on an annual basis for all the major dykes and dams, and this is an excerpt with respect to this specific problem.
Q. And it is the whole of the excerpt with respect to Upper Salmon from the most recent report from the Dyke Board?
A. I cannot say that, I have not reviewed that report since last fall, but I would suggest it's most of the essential justification for the work.
Q. So my question is, is there the possibility that there is some section of the Dyke Board report which would make reference to data that's been collected since the Agra report of '99 that we haven't been provided with here?
A. It's possible, but I don't think so.
Q. The data that has been gathered since 1999 pursuant to these Agra recommendations, would that information--is that part of the information that would be being considered by Acres in preparing their engineering study?

Page 148

A. Yes, it would. Any information that's available on the dykes would be made available to Acres who are reviewing the particular repair means.
Q. Thank you, Mr. Haynes. Mr. Chair, if we could move on now to project B-9, which is the replacement of the underground fuel tanks at Upper Salmon generating facility? And there is a response to an RFI, IC-2. Perhaps if that could be brought up? And the question was, "Do the existing regulations require replacement of these tanks in 2005?" And the response was that the existing regulations do require the tanks to be complaint with the regulations. And Hydro does not have a certificate of approval for the current tanks. The lack of a certificate of approval at this time, is that because the tanks are non-compliant with the regulations in a way that can only be addressed by way of complete replacement as is being proposed?
A. Complete replacement is the most expedient way to fix--to attain approval of these particular tanks.
Q. When you say expedient, that means that would

Page 149

MR. COXWORTHY:
be fastest to achieve that compliance?
A. No. It's the most cost effective way. The existing tanks are buried. We have to go and excavate it. There's a high level of risk with a leak from the point of view of the 21 year old tanks that are there. And a significant portion of the cost to actually reinstall underground tanks is obviously backfilling and the care and caution that has to be taken with sand, etcetera. So, above ground tanks have been our, have been our standard for replacing all underground tanks, essentially.
Q. So it would be possible, perhaps not expedient, but possible to bring yourself into compliance with the regulations without performing a complete replacement of these tanks?
A. Not in our opinion.
Q. Has there been consideration given of the alternatives?
A. This was reviewed by the engineering department when they go down through and looked at the options for remediating the

Page 150

particular situation. And the underground tanks, in their view, in their engineering opinion, the most cost effective and practical thing to do is just to dig up the tanks and replace them, they are 20 plus years old, with an above ground tank that has secondary containment and as well bring it into compliance for the metering and reconciliation purposes.
Q. Going back then to the project justification itself at page B-9. The project justification raises three specific issues, as I read it, with respect to non-compliance of the regulations. You've mentioned, I believe, at least two of them, the no secondary containment and the lack of leak detection measures. And a third one is given that there's no means of quantifying fuel use for reconciliation purposes. Could something less than complete replacement address any one of those three?
A. It would not be, in our opinion it would not be cost effective to go in and cherry pick certain things. We have to have all these things to be compliant with the legislation

Page 151

and to get our, you know, to get these things registered. The reconciliation, you know, you could put meters on there and actually do some of that there, but still, it would not have addressed the single walled underground tank. So, when you go in and do these projects, we would like to go in and basically fix the whole. We will not get an approval unless we do it all.
Q. Would it be fair to say then that it is really the no secondary containment issue which is really the driving force to going to replacement as opposed to some less comprehensive means of dealing with this?
A. No, I think there are two major things there. One is the leak, second leak containment. The other issue is the reconciliation. Under the GAP regulations we do have to reconcile fuel usage, which basically is a calculation or a dipping of the tank and so on. Most of these sites, in fact, all of these sites are essentially unmanned for most of the time. And, you know, if you go in and do a daily dipping, then you may not need to do a reconciliation the same way. It depends on

Page 152

what you have. But we don't have people there all the time. So this is the logical way to do this.
Q. And if you could expand on why replacement will make it easier to quantify fuel use for reconciliation purposes as opposed to some other means of trying, attempting to do that?
A. This particular project is, I'll say comprehensive in the sense that it will replace the tanks, it will look after secondary containment, it will install the appropriate meters and equipment to actually monitor fuel usage so we can do proper reconciliation to fuel usage, which is a calculation done essentially to determine whether you have a leak.
Q. These tanks have been non-compliant with the regulations. How long has that been the case?
A. I'm not--I think they're--I can't quote when the regulations, when the GAP regulations came in. I believe, I stand to be corrected, it was 1992, and certainly since then it would have been non-compliant.
Q. So you would not have had a certificate of approval for these tanks since 1992, not a

Page 153

MR. COXWORTHY:
current one?
A. That's correct.
Q. In the "Operating Experience" section, Mr. Haynes, for this project, it's identified that one of the tanks, the west Salmon tank is a 1987 tank, the other two are '82 structures or installations. Could it be said that there is greater urgency to a replacement to the '82 tanks as opposed to the '87 given the difference in the age of those installations?
(2:00 p.m.)
A. Not in our opinion. What we are striving to do is to be compliant with the current legislation and to be compliant with the legislation we need to attend to all these tanks.
Q. They're all equivalently--they're all non-compliant to the same extent?
A. Yes.
Q. Thank you, Mr. Haynes. If we could move on then to project B-11, Mr. Chair, which is the upgrade controls spherical value No. 6 at Bay D'Espoir? And if we could bring up the response to RFI IC-4, which was a costing of

Page 154

the four previous replacements for other spherical valves at Bay D'Espoir. And there's been a fairly wide range over a fairly short period of time, both in the budgeted amounts and in the actual expenditures, Mr. Haynes. Can you give us some perspective on why that's been the case?
A. The variation specifically I think I recall in 2003 we actually purchased some spares for these particular new valves. The other variations are basically depending on the timing, the degree of difficulty getting any equipment out or if there was some setback or some particular issue in, you know, with respect to the condition of the equipment as found. But the big and only, you know, the primarily, I guess, in 2003, I believe we actually purchased additional some spare parts to ensure that we can maintain the other systems.
Q. So the spares in 2003 weren't purchased for Unit No. 1, they were purchased with respect to the other two, I guess at that time three valves that had not yet been upgraded?
A. The spares were purchased in--at the end of

Page 155

2003 or during that process we would have had three of the four identical units done and we purchased the spares at that particular time.
Q. And the spares though were for what purpose, spares for which, for all six of the units?
A. Oh, yes. No, for--well, for the three that had been replaced to date. In 2003 there were only three replaced.
Q. Okay. So the spares would have been spares for the new upgraded versions as opposed to spares for the remaining old valves?
A. That's correct.
Q. There are two valves that remain to be upgraded, and I think the plan is to upgrade both of them, is that correct, Mr. Haynes?
A. We plan to upgrade one in 2005 and the other we are proposing eventually we'll see next year for 2006.
Q. Would it be more cost effective to upgrade both valves in one year, would there be saving, for instance, in labour mobilization costs or in other costs in doing two valves in one year?
A. In this particular case we don't think so. We also look at the availability of the machines

Page 156

for services, so, you know, it would be an extended outage on unavailability of the equipment. This work is, the materials are required, which is fairly straightforward, but the labour is actually internal labour, so there's no, there's no quote, unquote, "significant" mobilization, demobilization of contractors. It's at Bay D'Espoir where our crews are, the home base, if you will, of the crews.
Q. If we could turn then back to page B-11 and the "Operating Experience"? And in the "Operating Experience" it's stated that this generating unit, the generating unit in respect of this particular spherical valve, I would understand, operates 5500 hours in a year. There are, I believe, 8760 hours in a year, approximately. So you're talking about approximately 60 percent of the time in any given year the generating unit is in operation. Further to your evidence in last year's budget hearing for the 2000 budget in respect of the upgrade at that time of spherical valve No. 3 you indicated that this reflected the 5500 hour figure. That's still

Page 157

MR. COXWORTHY:
reflected that you could have stopping and starting of the unit as much as two or three times in a day and also this would reflect there would be greater use generally in wintertime than there would be in summertime. Is that--does that remain the case?
A. That remains the case. When the unit's available for operation, it does not mean that it's actually generating, so you're correct.
Q. Are all six of these spherical valves, and I believe they're all in respect of powerhouse No. 1, is that correct?
A. They're in powerhouse No. 1, yes.
Q. Are they ever simultaneously in operation, all six?
A. Yes. Often.
Q. Often?
A. Particularly in the winter or even in the summer if the--well, not necessarily in the summer, but in the shoulder (phonetic) months of the spring and fall when the system load is down or Holyrood may be shut down, they would be sometime during the day all six units would be often running.

Page 158

Q. So, from an economic analysis point of view, and it's already been identified that phased replacement is the greatest net positive result, how are items 3 and 4 disadvantages, if they've been included within the costing and within the economic analysis and even with their inclusion, you still come up with a net positive result in relation to the phased replacement. How are 3 and 4 disadvantages to phased replacement?
A. Additional work that would be undertaken to do the phased replacement. The costs are included in that particular exercise as they should be. At the end of the day, the net present value or difference between the two is less than ten thousand dollars. In our view, the right thing to do is to go in and do the job right from the beginning which is to replace the whole of the penstock. Ten thousand dollars, net present value on six hundred thousand dollars is fairly insignificant. However, in a theoretical point of view, you're right, it is the lowest cumulative present worth as we presented in the report.

Page 159

Q. Going on then to look at what's stated to be the advantages of going with the full replacement which is the continuation there on page 17. And there are five advantages to full replacement identified there. Substantial reduction in potential liability to Hydro for potential failure or rupture of the wood stave penstock. Would one also achieve a substantial reduction of potential liability by way of phased replacement?
A. Not to the same degree.
Q. But you would achieve a substantial reduction?
A. There would be a substantial reduction in the lower part and a reduction in the upper part, but they are not equal.
Q. Would phased replacement increase the liability of the penstock?
A. No, it would--not as reliable as a full scale replacement.
Q. But increase it over what it is today?
A. Yes.
Q. Would phased decrease the energy losses such as water loss from wood stave penstock and head loss friction.
A. From the lower section, there would be a

Page 160

decrease in water loss; from the upper section, probably minimal.
Q. Has there been any quantification of that given that the lower part is high pressures? Is there more water loss from the lower as opposed to the upper or do we know that?
A. Likely, yes, but I have not--that would make logical sense, but I -
Q. Make sense if there's more water loss from the lower portion?
A. It's the same condition and higher pressure, yes.
Q. That would be the part that would be replaced first under phased replacement?
A. Yes.
Q. Use of a renewable resource. Well, that's occurring whether it's phased replacement or full replacement, wouldn't you agree?
A. Well, yes, however if you phased replacement, you'll have two extended outages versus one and so on. So, I would suspect that there would be some increase in the non utilization of water by phased replacement.
Q. When you said, in terms of the time period to complete all of the work -

Page 161

MR. HAYNES:
A. To complete the work, yes.
Q. - the time that the system is down and not contributing capacity to -
A. That's correct.
Q. How much difference do you think we're talking about between full and phased replacement in terms of down time for that plant?
A. I can't quantify that, I don't know off hand.
Q. Is it days?
A. I would suggest it's weeks, if not a--at least weeks, possibly a month or two, but I -
Q. And that's over this whole period of getting to replacement.
A. Yes.
Q. Which would be over, to the second phase would be completed in 2011, is that correct?
A. I think 2016 was what was used in the analysis.
Q. 2016, I'm sorry. So, you're talking about a loss of weeks by phased replacement over that period between 2005 and 2016 -
A. I'd suspect, yes.
Q. - as being the loss of use.
A. Yes.

Page 162

Q. And a design life in excess of 30 years from the new penstock, you will have that with respect to phased replacement as well, won't you, once the phased replacement is completed. Is that correct?
A. Yes, the upper penstock will be 60 years old when it's replaced which is an exceptionally long time for a wood stave penstock.
Q. But you will have--I believe the disadvantage is being stated as an advantage of what you have when you're completed is a new penstock that would last you for another 30 years, is that correct?
A. And hopefully trouble free, yes.
Q. And you would have that advantage, I should say, whether you went with phased replacement?
A. After 2016, yes.
Q. Has there been any consideration given to 30 years out even from 2006, whether, in fact, this is likely that this particular plant which has already been identified as relatively low capacity plant, is likely to still be in use?
(2:45 p.m.)
A. We have looked at that particular plant, the

Page 163

equipment in it and we're quite comfortable that we can maintain that for long term. And if it's economically viable, and we think it will be, we should continue. It is a half a megawatt, 590 kilowatts, it does contribute three and a half million kilowatt hours which is basically almost 56 hundred barrels of oil a year. So, we see no reason why in the ongoing emission, you know, the emission credits or cost in the future would not be economic.
Q. So, you best judgment would be that it's likely that this Snook's Arm plant will still be in operation in 2036?
A. There are many hydro plants in the world a hundred years old that are still in operation, so yes.
Q. If I could as you to please turn to the response to Newfoundland Power's RFI NP-1. These are referred to by Mr. Haynes in some early questioning with respect to the levelized incremental costs. And the levelized incremental cost of replacement where, at 5, 6 cents per kilowatt hour. And this is full replacement, is that correct, is

Page 164

that what that figure applies to?
A. Yes, that's correct.
Q. As opposed to 7.6 cents for a retirement of plant scenario. Do we know what the levelized incremental costs would be with respect to a phased replacement?
A. We didn't calculate that number, but it would be only marginally higher than 6 cents a kilowatt hour.
Q. So, it would be higher than the six, do we know that?
A. Yes, but very, very small amount.
Q. So, not an amount that would be relevant in determining the economic advantage to one over the other option?
A. It would never approach 7.6 cents.
Q. If I could refer you now, Mr. Haynes, to IC-54, the response to RFI IC-54 and it was confirmed by that response that the only estimate of cost that provided was with respect to replacement by steel penstock, even though the Hydro report identifies that there are other options that could and presumably perhaps should be looked at which are fibreglass or high density plastic products.

Page 165

MR. COXWORTHY:
Why did Hydro choose to only estimate, at least at this stage, only replacement by steel?
A. The engineering section, the generation engineering division looked at that, they reviewed those things and they think, subject obviously to further studying refinement, that that would be the conclusion at the end of the day. It will be reviewed during the design review and we will do what's most cost effective.
Q. Are you aware of any developments in terms of international markets for steel and the effects on steel costs on whether it's likely that the cost of steel penstock will be higher than your initial estimate?
A. We know that there is some upheaval in the market in steel. However, when we do the evaluation, we will use the most current numbers available and those numbers move around.
Q. Do you know when, as of what date, that estimate in terms of steel cost is based on for steel?

Page 166

A. That would have been done during, prior to budget submissions, that report was dated January of this year.
Q. January 2004?
A. Yes.
Q. So, that would reflect January 2004 prices at the most recent -
A. That would reflect the current engineering prices that they're using for steel, yes.
Q. Do you have any sense yourself as to whether the fibreglass or high density plastic product options would be less or more expensive than steel? Do you have any information about that?
A. No, I don't, but that will be reviewed prior to final design criteria being selected for this plant.
Q. Does Hydro perceive that there's any advantages to steel, that even if steel were to prove to be the high cost option from those three, that Hydro might still choose to go with steel?
A. I would say that if Hydro were to review the available technologies or the available materials to do that and steel was preferred

Page 167

because of other considerations we didn't quantify, that the difference in cost would have to be very, very small to actually go to a more expensive option.
Q. So, there would be a very strong bias for its going towards the low cost option. There's nothing about steel in terms of, for instance, familiarity on the part of Hydro with structures that use that material that might -
A. No, that would be thrust from management's perspective, our objective is to go with the least cost, least reasonable cost to do this work.
Q. Mr. Haynes, can you comment on why a replacement of the penstock might not be done with the material that is being used presented with the wood replacement?
A. I don't think that we ruled that out. I mean, Canbar is still in existence. We have not ruled out any specific material.
Q. So, wood is in consideration. Do you know whether it's under active consideration? Will there be an estimate prepared as with fibreglass and plastic for wood replacement?
A. I'm nor sure if it's under active

Page 168

consideration, but basically we will look at the penstock replacement and review any material that's suitable for the job.
Q. Are you aware of any reason why wood would not be suitable?
A. It's a higher maintenance issue in the long run because of the problems that we see now versus steel or poly or whatever.
Q. But there appear to have been some problems even on the initial installation of this particular wood penstock. There's some identification in the reports that the initial components were damaged even before installation. So, that may have comprised, perhaps from the very beginning, the integrity of the wood structure.
A. Yes, but that particular--that had to do with the ends, the butts of the wood and there was a, I think, a steel spline or something put there to remediate that and I think when you look at the pictures in the report, many of the leaks are not actually at the ends, they're actually in the running lengths. So, I'm not quite sure if that's a key factor or not. There was a field fix obviously done for

Page 169

MR. HAYNES:
the -
Q. All I'm saying is, based on the past experience that Hydro has had with this wood stock, is it necessarily a wood penstock, is it necessarily a predictor that you would have the same types of problems with a future penstock if it was also constructed from wood?
A. We may not, no, that's correct.
Q. Thank you, Mr. Haynes. Chair, if we could move onto the next project, B-19, the Anti-Fouling system for the Holyrood mussels, for the Holyrood plant. And if I could refer to the response, RFI IC-60. And by that response, the question was asked as to what reduction in staff compliment a retirement of equipment would result from implementation of this project. And it's identified by that, that there will not be any savings of that sort. The only additional savings will be in respect of a cost of hiring diving and vacuum truck contractors.
A. Yes, that's correct.
Q. What is that annual cost of hiring diving and vacuum truck contractors?

Page 170

A. The diving cost for the last two years averaged approximately $21,000.00 a year. And the vacuum truck was basically used to dispose of, haul away the mussels, etcetera, is approximately $9,000.00 a year.
Q. So, $30,000.00 a year, do that remain consistent over a period of time or -
A. Oh, we only looked at two years in this particular exercise, but there's no--it's a typical number and these contractor services are pretty well the same, escalating, of course.
Q. You're not aware of any reason why that would increase precipitously in coming years if you were to use the same level of service, the once a year.
A. The only way it would increase is if we were to get, you know, more mussel accumulation which is, you know, depends on the water temperatures and the use of the plant.
Q. There's identified for this project a $185,000.00 a year cost savings and I'm referring to the project justification in that regard at page 19. And what it says, additionally, the yearly cost associated with

Page 171

lower generation efficiency and the manual cleaning and removal of the mussel infestation for the three units amounts to $185,000.00. So, within that figure, does that include the $30,000.00 for the diving contractors?
A. Yes, it would.
Q. And the remainder then is Hydro's estimate of the lower generation, the cost of the lower generation efficiency caused by the mussel infestation not being cleared up as quickly as it might otherwise be.
A. The actual total cost of doing it manually is approximately about fifty two or fifty three thousand dollars a year. It's the diving contractor, the vacuum truck and also our own internal labour and materials that we use. So, the operating cost is indicated in IC-59 and our operational costs are pretty well awash. The significant savings are in the efficiency improvement which we anticipate to be--well, depending on the price of oil you use, of course, in the one hundred and seventy, hundred and eighty thousand dollars a year, depending on the price of fuel.
Q. I think that's identified, in fairness to you,

Page 172

Mr. Haynes, but perhaps the Board should be referred to this in the response to RFI IC-81. And this is the production evidence with respect to which of the capital budget items will improve efficiency. And there is reference to the B-19 and to this efficiency factor being estimated with respect to improved efficiency and reduction in oil costs. That estimate in terms of improved efficiency, how was that arrived at in terms of how did you determine that this anti-fouling system would achieve such efficiencies?
A. That particular numbers, they're average over, I believe, a four year period. The actual analysis was done by the plant staff, the plant engineering and maintenance staff who actually looked at--they went over the last two or three years or the last four years, I believe and looked at the number of times they had to derate the unit, the number of times that we could not meet plant output and assigned a value on a fuel. So, it's an average of, I believe, it's four years and they anticipate that by removing the mussels

Page 173

MR. HAYNES:
and not having that loss of efficiency that we would actually improve to that tune.
Q. Has there been any measuring that you have to reach a certain critical mass of the mussel infestation within the intakes before it starts impairing efficiency?
A. I think the biggest factor in actually the mussel accumulation is the water temperature if I recall correctly from the studies and the use of the plant obviously. If we're not using the plant in summer and the water is not going through, there likely would not be any condenser build-up, but basically our history in the last X number of years that we are using this plant in the prime whatever season that these mussels actually start to have little mussels. I'm sorry, I don't know the right biological term, but there are times of the years when they grow a lot and there are other times when they're fairly dormant depending on the water temperature and we do use the plant when they are active, for lack of a better word.
Q. It's not just any mussels presumably in the

Page 174

system or any number of mussels that causes the problem, but you do have to reach a certain critical level or mass of mussel infestation before you have an efficiency problem?
A. Oh yes, and I think the photograph that came from the Holyrood plant that we put up this morning is indicative of the issue itself and that's all over the cooling system.
Q. But it's not like that 365 days a year, those pictures you've shown us, is the mussel infestation at that level -
A. Once they're there, they generally stay there because they are--unless they migrate, I'm not sure -
Q. Until you have your one-year annual -
A. And then we go out and shovel it out, if you will.
Q. How long does it take to build back up again to the level that we see in this photograph after they're been removed?
A. I don't think it takes very long because they start off as small and they grow. Once they're attached to the walls and the condenser tube, they stay there. The other

Page 175

issue is when they get inside the system, the cooling water itself get flushed through hundreds and hundreds of tubes and if they get big enough, they can't go through the tube, then basically they block the tube. That's part of the efficiency by not having them there in the first place.
Q. If it does cause that degree of impairment in efficiency and other problems, has Hydro ever considered having the diving contractors come in twice a year to clean these out?
(3:00 p.m.)
A. This requires a shut down, this requires to shut down the plant, that particular unit to unwater the cooling water intake. It's a fairly significant amount of work.
Q. How long is that shut down per diving inspection and cleaning?
A. For this particular work, I'm not quite sure, I think it's two or three weeks to actually do that, but I'm--a couple of weeks I would suggest.
Q. So the plant is down for a couple of weeks?
A. No, the plant is down more than that.
Q. During the clean up operations?

Page 176

A. Yes, but there's a lot of other work on the go at the same time.
Q. Okay, so it's co-ordinated with plant shut downs for other purposes.
A. Yes, absolutely.
Q. So, the plant hasn't been shut down solely for the purpose of cleaning the mussels out of these intake valves.
A. We do run back on load and we have shut down half the condenser to go in and remediate some of these problems if it gets acute.
Q. The anti-fouling system that Hydro is choosing here, has there been any track record, experience with it, by other utilities that Hydro is aware of?
A. My understanding is it's quite common in a lot of areas and much more common in utility environment that it was, say, 15 years ago. It is a newer technology, if you will; one that has been proved successful and other utilities do use it, but I can't cite the utilities off hand.
Q. Have you actually contacted any of those other utilities to see whether, in fact, the anti-fouling system has proven to be as affective

Page 177

MR. COXWORTHY:
as the manual removal of mussels?
A. I believe we did contact other utilities or other users and our question would not be on the effectiveness, the question would be, does it work or can they confirm that this is as the biologist and so tell us, this is a good way to remediate the problem. The economics would be our own situation, our labour costs, cost of the equipment and so on. That would be an analysis that we would do.
Q. And the feedback you've gotten then from contacting other utilities as to whether it works, have you gotten positive feedback?
A. Yes, it does work.
Q. In similar context to what you're dealing with here, when I say that, salt water as opposed to perhaps a plant on the Great Lakes that might have other types of mussel infestation.
A. I would not have asked that specific question if it was a tide water plant, but I can't imagine it would not. I'm sure that they did actually ask those questions.
Q. The system, the anti-fouling system, uses chemicals to -

Page 178

A. It actually uses a copper, it's an electrical chemical reaction that actually basically creates copper ions and actually injects it into the cooling water intake and seven to ten parts per billion, I believe is enough to mitigate the mussels from growing.
Q. Is it anticipated that this system will remove entirely the need for manual inspection of the, by diving contractors, of these intakes?
A. For the purposes of mussels, we do not anticipate having to go in and get a diver to go in and do that. We still use divers, we still have to inspect. So, it would greatly reduce the amount of time that somebody is in there cleaning up. We still have to obviously take it down, walk through and do an inspection to ensure there's nothing else on the go.
Q. So, that $21,000.00 a year expenditure that you have us before as the diving expenditure per year, how much of that will actually be eliminated by the anti-fouling system?
A. That amount of money was specific to this issue.
Q. So, any additional diving work is additional

Page 179

monies over and above it?
A. Yes, for the cooling water, for the screens or whatever. There's lots of other work out there that we use divers for, not lots, but a fair amount.
Q. And is it anticipated the anti-fouling system will remove entirely the need for manual removal of mussels from the -
A. Yes, it is, that's our understanding and if it's not, it will be very minor.
Q. Thank you, Mr. Haynes.
CHAIRMAN:
Q. I think we'll take a break, Mr. Coxworthy.
MR. COXWORTHY:
Q. Thank you, Mr. Chair.
CHAIRMAN:
Q. We'll take a 15-minute break.
(BREAK - 3:04 P.M.)
(RESUME - 3:42 P.M.)
CHAIRMAN:
Q. Carry on, Mr. Coxworthy.
MR. COXWORTHY:
Q. Thank you, Mr. Chair. If we may move on now to project B-20, which is the installation of the fire protection system for the microwave

Page 180

radio room in Holyrood, and Mr. Haynes, if I could refer you to RFI IC-61, the response. And the response referred to "to guarantee this high availability of the telecommunications network, the majority of the telecommunications network is owned and maintained by the company with alternate routing leased from Aliant Communications." And my question, Mr. Haynes, is why should we accept that there is a higher guarantee of high availability with a Hydro-owned and maintained system, as opposed to one that's been obtained through the private sector?
A. The communications system, it's already in place with respect to the microwave system, which basically backhauls all our traffic and so on, and the lease rates from Newfoundland Telephone are high. They are a common carrier who are dedicated to providing service to everybody. We have priority on our own network obviously, for our telecommunications needs, our data, energy control centre communications to the various areas that we deal with.
Q. The alternate routing that you referred to, is

Page 181

MR. COXWORTHY:
that in use regularly, the alternate routing through Aliant?
A. I think in some low priority areas, there may be some leased lines from Aliant, but Mr. Downton could probably confirm that when he's on the stand.
Q. So the alternate routing isn't in respect of communications at Holyrood?
A. Not specific for Holyrood, no. Holyrood, I think, is directly connected to our communications infrastructure.
Q. You don't presently have an alternate routing through Aliant for Holyrood?
A. To my understanding, no.
Q. Would that be a potential backup solution to what the problem is here, which is that if the sprinkler system was engaged that it could damage the microwave system? Instead of dealing with that, could an alternate solution be to have alternate routing through Aliant?
A. In our opinion, no. There is other equipment in the particular room besides the microwave equipment. There's servers. There's a telephone switch. There's Aid Pro computer

Page 182

software, which allows up to optimize the plant. So it's not solely--it's called the microwave room, but there's other electronic equipment inside that particular room that this system would protect.
Q. Thank you, Mr. Haynes. If we could move on then to project B-21, which is the Stack liner for stack #2. And if I may make brief reference back to the 2004 budget, and I don't know if we need to bring it up on the screen, but if it's available, Section G, Appendix 3, and the replace steel liner option at that time, identified as a March 2003 estimate, the cost to replace stack liner #2, the one that's presently before the Board, the March 2003 estimate at that time was $1.2 million. What's now being proposed to the Board for 2005 Capital Budget is, and one would need to look at RFI IC-9 in the response of this year to determine this, but the cost for the stack liner #2 now has gone from 1.2 projected estimate to 1.85. Can you explain to us the increase in cost over that period in that estimate?
A. Can I see the one from the previous?

Page 183

Q. The Section G, Appendix 3 of the 2004 budget, page three, and it's in Section 2.3 there, and I believe that was the estimate in respect of stack liner #2 being projected at that time.
A. The total liner estimate for the last job that we had done was estimated--I understand from what's presented, the 1.2 may have been the material cost, because in the last job that we had done, the actual estimate for the complete job, which include the overheads, escalation, et cetera, the estimate was $1.776 million. That would have been the all-up number, if you will, and the actual was actually very close to that.
Q. So the 1.2 that appears at that part of the report is not the complete figure, even at that time for the estimate?
A. Based on what's presented there and what we actually had in the budget, approved budget last year, that would have been the materials only, I would understand.
Q. Turning then briefly to stack liner #1, and of course we've seen the estimate costs that were estimated for that replacement, and we've heard the evidence today that, in fact, once

Page 184

that replacement was commenced, the stack liner was actually in worse condition for #1 than had been thought. What was the final cost for replacement of stack liner #1?
A. The stack liner was $1.782 million.
Q. And why is it anticipated that the cost for stack liner #2 replacement will be higher, the 1.85 million?
A. Well, there would be escalation obviously and there would be escalation, higher wage rates and so on. There's no specific single reason why we have -
Q. It's just attributable to normal or expected increases in various costs?
A. Material supply, labour contracts, et cetera.
Q. If we could move on then, Mr. Haynes, to project B-24, which is the installation of the main fuel lines at Hardwoods.
A. I will--the Hardwoods gas turbines and Stephenville gas turbines are under TRO, but I will attempt to answer as best I can.
Q. I apologize. My understanding was, from the witness breakdown, that you would be answering in respect of this, but -
A. I'll make every effort to answer the question.

Page 185

MR. COXWORTHY:

Q. My question is with respect to the response that was made to RFI IC-10 in relation to this project, and the question was whether the regulations in fact required the valve replacement in this year, and the response was that it was not required in 2005, but a modification was required as a condition of a Certificate for Approval. Does the Certificate of Approval, and I recognize of course that you may not know the answer to this, given your earlier comment, does the Certificate of Approval itself specify a time frame within which this valve must be replaced?

A. No, it doesn't specify a specific time frame, but it was a condition of the Certificate Approval. It should have been done.

Q. But you won't be in violation of the Certificate of Approval if you don't replace in 2005, as opposed to 2006? There's nothing in the Certificate that puts a specific time frame on that?

A. It's my understanding the Certificate of Approval requires the valves, so we would be

Page 186

in -

Q. Let me put it another way. You will be no more in violation of the Certificate in 2005 than you would be in 2006, if the replacement is deferred?

A. No, we wouldn't be any more, but we could be subject to fines or whatever other remedies that the Department has.

Q. How long as this Certificate of Approval requirement been outstanding?

A. I do not know that, the year.

Q. Has Hydro been subjected to any fines to date in respect of -

A. No, but I think it's worthwhile to add that we have several areas in the fuel regulations where we are non-compliant and the regulator is aware that we are mediating all those things over a period of time and they've been--they have understanding, I guess, or they know that we're at this and they have not come down with the heavy hand from--the heavy hand, if you will. They know that we are working at these things and we will be meeting all these things over a period of time.

Q. The next project I want to discuss, and I

Page 187

recognize, Mr. Haynes, that you may have the same response if this was intended to be triggered as a TRO matter or by the previous panel, but this is B-25, the installation of the Diesel Generating Set at Stephenville gas turbine. Are you in a position to respond to questions in respect of that project?

A. I will certainly have a go at it, but if I fall short, I'll acknowledge that.

Q. We'll understand why. Thank you, Mr. Haynes. Do you know whether it's possible to enhance the reliability of the existing battery system in Stephenville without incurring the full cost of a $95,000 duplicate system? And I should say I'm making reference, and I apologize, to RFI IC-12 in that regard. Because a question was asked as to what would be the cost of installing a duplicate battery system in Stephenville, and the response that's been given by Hydro is that, that would cost $95,000. And I guess my question again is, is there any other way to enhance the reliability of the existing battery system without incurring the cost of a duplicate system and obviously without incurring the

Page 188

cost of purchasing this diesel?

A. No, I don't think there is. What this project is intended to do is to ensure the reliability and the availability of that particular unit when we get in trouble in that area. The intent is to allow black start capability to provide air to the system, you know, so we can start the generator.

Q. Stephenville is a gas turbine station. Does all of Hydro's gas turbine stations have the same sort of diesel generator backup to the battery system, all of them other than Stephenville?

A. I do not know that answer specifically, but I think--when you look at this sort of system, you have to look at where it sits in the system, what the other sources of supply are. Stephenville is on a radial--you know, it's not as robust in terms of multi-connections as say Hardwoods.

Q. And that would be another situation where there is a gas turbine in operation. Do you know whether there's diesel backup at Hardwoods for the battery system?

A. Yes, there is.

Page 189

GREENE, Q.C.:
Q. If it's helpful for the record, we can confirm that the others do have the backup.
MR. COXWORTHY:
Q. Thank you. The operating experience example that's given in B-25 of March 4th, 2003, is that a worst-case scenario, Mr. Haynes, in terms of is that a rare event and one unlikely to be repeated?
A. Just give me a second, please.
Q. Certainly.
A. I think, based on what's written here, and based on discussions that I've been party to, that the exposure is there often. We often run the machine as a synchronous condenser. When we shut it down, we do have to run the DC systems for a period of time to ensure the shaft--you know, lubrication on the machine and so on. It is rare, but very possible to occur at any point in time.
Q. If I could move on then to the response to IC--RFI IC-11 in respect of this project. It appears from the response that this situation has been recognized at least by Hydro for the past five years that there has been a concern

Page 190

with respect to black start reliability. Is that the case, that that has been recognized as a concern, at least for the last five years? And I say five years, back to '99.
A. I can't say specifically, I'm sorry.
Q. Okay. Would you agree from the information that's provided by IC-11 that it appears that there's been an average of only one failed start per year in that time period since 1999?
A. Yes.
Q. Do you know whether any of those failed starts have resulted in any prolonged interruption of service or caused any significant damage to the gas turbine unit?
A. I'm not aware that it has, other than the March 4th event.
Q. With that information in mind, is there any urgency to implementation of the diesel backup solution in 2005, as opposed to 2006, given the average of only one failed start per year and in that time period, there only having been one event, the March 4th 2003 event, that's caused significant damage or significant prolongation in interrupted service?

Page 191

A. I feel it is urgent that we do this. It's an exposure to a gas turbine that's part of our portfolio of generation that is essential to meet the power energy needs and to reliably meet those needs. This is a proposal that will actually minimize that risk and one that we've employed at other gas turbine sites.
Q. Thank you, Mr. Haynes. Mr. Chair, those are all the questions I have for this panel. Thank you, Mr. Haynes.
CHAIRMAN:
Q. Thank you, Mr. Coxworthy.
HUTCHINGS, Q.C.:
Q. I have just a couple of matters to deal with, with Mr. Haynes on this panel, Mr. Chair. Mr. Haynes, if we could look quickly at the project at page B-15, that's the Dry Ice Cleaning System, and in conjunction with that, we have the response to IC-57 which asked what other steps Hydro had taken to eliminate the problem of brake dust and oil mist on the rotors and stators. The figure that's quoted in IC-57 at line 12 talks about another solution to these problems, which involves an expenditure of $100,000 per unit. I take it

Page 192

that is some other system which will prevent this dust or mist from attaching itself to these rotors?
A. Yes. That system would actually reduce specifically the carbon dust from the slip ring, from the brushes. It would actually contain and collect that particular dust. It doesn't necessarily mitigate oil contaminants and so on, but it does help reduce the overall contamination.
Q. As I understand from the answer, such a system is in place in the Granite Canal project?
A. Yes, that was designed in with the machine.
Q. And was the cost similar?
A. It would be my understanding that this, that it would be similar. However, I should add that Granite Canal was not a retrofit to an existing unit, so it would have been a lot easier to implement and the cost may have been lower. When you go back and retrofit, typically the cost is more.
Q. No, I understand, but you know, to whatever extent somewhat up to $100,000 we have paid at Granite Canal for this other system?
A. Yes, we have.

Page 193

HUTCHINGS, Q.C.:
Q. Yes, okay. Now this Dry Ice Cleaning System that we're talking about here, I take it that's not a mobile system? That's affixed to the particular units that it's associated with, is it?
A. No, actually it is a mobile system. It's one system for all Bay D'Espoir or for Cat Arm or Hind's Lake or anywhere else that we can take it and use it. It's a portable device that we would use in any winding cleaning or on any generator.
Q. Okay. So if this were acquired and Granite Canal hadn't had that system built in, you could in fact have taken it to Granite Canal and used it there as well?
A. Yes, we could have.
Q. Okay. The reference to reduction of cleaning time by 50 to 60 percent, is this simply a reduction in your staff time that you're speaking about?
A. Yes, it's basically labour.
Q. Okay. But up until now, this service has been contracted out?
A. Yes. Well, we have contracted it out. We've

Page 194

also done it by rags and chemical or cleaning solution. We've done it both ways, depending on the availability and the time of the year.
(4:00 P.M.)
Q. Okay. Is it anticipated that even with the system that's in place in Granite Canal, there may be other cleaning required?
A. Sorry, you mentioned Granite Canal? I didn't understand.
Q. Even with the system that's been built into the Granite Canal project, is there still going to be a requirement for cleaning?
A. At Granite Canal?
Q. Yes.
A. Possibly, but I'm not--I can't be certain of that answer. This particular unit would be used--the Granite Canal is a containment around the dust-generating mechanism. So it's not a portable thing. It's a part of the machine, if you will.
Q. Right.
A. And part of the standard design. This is a portable machine that would allow us to clean these windings. I think it's worth noting as well that these windings range in--number

Page 195

seven is 28 years old and units one to four are 38 years old, so all these things help prolong the life of the winding and to ensure that we keep it clean, and if we do have a failure, it won't be a big failure. It'll minimize the damage.
Q. So the intent here is to displace the maintenance costs of this 15,000 per unit or whatever it may be with this new piece of equipment?
A. Yes, and it does a better job than manual cleaning, the dry ice system.
Q. Okay. All right. If we could look now to page B-16. This is the upgrade of the control system at Holyrood, and this project is well underway, I understand, having been approved last year for about a million and a half dollars. Is that correct?
A. Yes, 1.6 million for 2004.
Q. '04, yes. In your presentation of last year, in respect to this project, there had been filed a report which was at Section G, Tab 2, which was the Distributed Control System Lifecycle Planning Report, which I think you and I discussed last year in connection with

Page 196

this, and it seemed fairly clear at that stage that there was really only one potential supplier who could accommodate the work that had to be done on anything like an economical basis. Is that a fair characterization?
A. That was certainly our understanding at the time.
Q. Yes, okay. And it now appears that in addition to Westinghouse which had all ready by that time, I think, been called Emerson Process Management, that there is this option to go with the Foxboro Company and that's what you're now recommending?
A. That's what we've done.
Q. Okay. When you say you've done, you did that in respect of the work in 2004?
A. Yes. It's a Foxboro System that is installed as we speak and being commissioned now.
Q. Okay. So while this is a project spread over two years, it's not divisible in the sense that this is one unit or two units. It is all a single process which is taking place over a two-year period?
A. Yes, that's correct.
Q. Okay. All right. You note at page B-18 that,

Page 197

HUTCHINGS, Q.C.:
in item five there, that Foxboro have a superior history of long-term commitment through the backwoods compatibility and so on. You noted that recent clients of the migration processes were contacted and were pleased with their systems and so on. How is it that when you were before the Board last year, you were unaware of this great history that Foxboro had in terms of actually doing exactly the sort of work that you now have them doing?

A. What we were unaware of, I mean, there are other companies who can replace that system besides Foxboro. The natural migration path that we proposed to the Board last year was based on a migration path that Emerson, Westinghouse Emerson had come up with to allow to reuse certain of their equipment and so on. Foxboro and--we were unaware, but we did become aware of it through contacts, through discussions and so on, that Foxboro actually does reuse certain components of the cabinets and the plug ins and so on, and it was actually through a WebEx conference, I believe, that we became aware of it and

Page 198

pursued it, and eventually came to the conclusion that Foxboro had a superior record and superior support even in the province, that was unavailable with Westinghouse, and the cost was basically similar.

Q. Is it fair to say that had you made those inquiries prior to the hearing last year, you would have been able to provide this information to the Board at that time?

A. That I don't know. Possibly. But we looked at the--what was looked at was the migration path from one Westinghouse version to another and it was a logical way to go, a logical route. You would reuse some of the equipment, the I/O card specifically, and in a Foxboro system, all that's been replaced, which will give us a longer term and supportable life than the current system.

Q. But you put to the Board last year in support of the $1.5 million that you asked the Board to approve, and they did approve, the notion that Emerson was your only option, correct?

A. That's correct.

Q. I just need to cover now, Mr. Haynes, a couple of questions that arose out of the reply that

Page 199

we got this afternoon to the undertaking which is U-Hydro No. 8, I believe, and that goes to an attempt to explain the differences that were noted between the economic analysis with respect to the Roddickton mini hydro dam at IC-18 and the analysis at Tab--Section G, Tab 1 in Appendix C with respect to the Snook's Arm project. Is it fair to say that essentially the difference, which doesn't appear on the face of the two documents that we previously had, is related to the capacity factor for the plants?

A. Yes, that's correct.

Q. And Snook's Arm is about a 68 percent capacity factor and Roddickton is only about 28, 29 percent?

A. Yes.

Q. Okay, all right. And that explains the difference between the 13,000 capacity charge with Roddickton Mini Hydro and the 45,000, almost 46,000 in respect to Snook's Arm?

A. Yes.

Q. So, the figure of $100 per kilowatt hour per year, that's the all-in capital cost of the gas turbine, isn't it?

Page 200

A. That's a levelized cost for a gas turbine. Gas turbines typically would cost roughly $1000 a kilowatt, so, obviously we would not impose-we would obviously not go out and buy a 400 kilowatt gas turbine at the $400,000 or whatever it is, so this is a prorated portion to, in theory, replace this particular capacity when we do need to bring on new system capacity.

Q. Yes, but when you use $100 per kilowatt per year, you're talking about going out and buying a 50 megawatt gas turbine and that would cost you $100 per kilowatt that that 50 megawatt turbine could produce, correct?

A. Yes, more or less that's right, yes.

Q. Okay, so I didn't understand your reference to the $1000.

A. To go out and buy a 50 megawatt gas turbine would cost in the order of approximately $1000 a megawatt.

Q. A $1000 per megawatt?

A. I'm sorry, per kilowatt, that would be the cost to go out and buy--it's approximately $1000 a kilowatt to go out and buy gas turbines of that size.

Page 201

HUTCHINGS, Q.C.:
Q. So if you're talking about a 50 megawatt gas turbine at $1000 per kilowatt, you're talking $50,000,000?
A. Yes.
GREENE, Q.C.:
Q. And may I again, for the record, that's the capital cost of the new gas turbine?
A. Yes, I'm sorry, that's the capital cost, this is levelized.
HUTCHINGS, Q.C.:
Q. So what you refer to as the levelized cost is the annual carrying cost of the asset, is that what you're saying?
A. I am not--I can't recall the specific calculation, but it's a number that we've used in previous studies and previous hearings. It's a number calculated by planning which is a fair representation of what a capacity installation only would cost Hydro on a levelized basis, annual.
Q. Okay--go ahead.
A. Annually, it's $100 per kilowatt per year.
Q. Okay. Is it fair to say that the gas turbine is, as regards the mix of generation of

Page 202

capability available to Hydro, the high end of the scale in terms of the availability to provide capacity?
A. Actually for capacity it's the cheapest. Simple cycle combustion turbines are typically the cheapest capacity-only resource that we could put on for capacity only.
Q. Yes, but in terms of the energy that they produced, obviously it's very expensive energy?
A. But the energy in this particular analysis is costed to our marginal cost the cheapest one, which is Holyrood.
Q. Which is Holyrood, no, I understand that, yes, okay. In terms of your system planning for the year 2010, 2011 when new capacity--or new plant is expected to be added, you will be needing to add both capacity and energy around the same time, will you not?
A. Hopefully, that's the opportune time to do it, yes. We have, obviously, as we presented I think in the GRA last year, we have some times of the year a difference between the two and we will review that and then make the best judgment as to what time to do it, but it's

Page 203

usually capacity and energy we add in this time frame.
Q. Your projection is for deficits in both energy and demand to occur around the same time at this point?
A. At this point in time, yes.
Q. And with that in mind, it is in fact unlikely that your solution in 2011 is going to be a gas turbine, is that not fair?
A. That's fair.
Q. Thank you, Mr. Haynes, that's all I have for this witness, Mr. Chair.
CHAIRMAN:
Q. Thank you, Mr. Hutchings. Mr. Kennedy?
MR. KENNEDY:
Q. Thank you, Chair. Mr. Haynes, I just have two projects and two questions, one on each one. So the first one I want to look at was B-13 which is the Snook's Arm project. And as I understand it what Hydro's applying for here in 2005 is $115,000 to fund the capital costs associated with the detailed engineering that needs to be conducted in order for you to set this project up for actual, the conduct of the order in 2006, is that right?

Page 204

A. That's correct, yes.
Q. And so at this point, the 1.815 million that is booked in there in B-13 for 2006, is Hydro's best estimate of what that project will cost, but it's subject to the results of that detailed engineering that you would conduct in 2005?
A. Oh yes, we would review the cost estimates and refine as appropriate.
Q. And, we don't really need to go there again, you were cross-examined about the net present value calculations that were afforded in support of that and it's in the Supplemental document, I think it was at Table 7.1, page 15.
A. Yes.
Q. Which provided the range of net present values from a low, I think of 586 to high of 863?
A. Yes.
Q. And that's 863,000. So would it be Hydro's intention that if the scope of this project was to become materially impacted by the detailed engineering work that you do during 2005, affecting the estimated cost of what this project would be for 2006, that you would

Page 205

MR. KENNEDY:
revisit the issue?
A. Certainly if there was a significant change we would have to revisit the issue, that would be only prudent on our part, but I would add that if the cumulative present worth difference of approximately six hundred thousand dollars, there would have to be a significant change to actually affect the overall project economics.
(4:15 p.m.)
Q. Okay, so you, as any good witness, anticipated my question which was that's a relative factor then in your mind to the determination of when a project would, if it was to go outside of its intended scope, require a subsequent review when it goes outside of its net present value tolerance?
A. It would require a review certainly internally from the point of view if there was a change in the economics, the viability of a project, we would obviously consider that further and have a second look. There is a fair latitude for change in the capital cost or environmental remediation cost which would still make this particular project economic.

Page 206

Q. Okay, keeping that in mind, I wonder if we could just have a look at B-21 which is related to the Holyrood upgrading of the civil structures there.
A. Yes.
Q. And there was the boiler stack and then the screen structure and I was just interested in the boiler stack itself. And on, I think it was direct examination, I'm not sure, it may have been during your cross here today, there was some questions related to--you were showing up some pictures of the liner at the top of the crane being ready to be slipped down inside the stack, correct?
A. That's correct.
Q. And if I gathered you correctly, you indicated there that you may not do the line of replacement in the same manner because that crane is not available, correct?
A. That would, obviously, depend on the bids or the quotations that we have for the work. We did not anticipate that the crane would be available last time through, we thought, you know, typically they're installed internally. We reviewed that particular bid and concurred

Page 207

that it was doable and it was cheaper, so we did it and when we go out the tender this year--or next year, I should say, we will entertain any particular construction techniques as long as they're reliable and can do the job.
Q. Okay. Mr. O'Rielly, do you have the 2004 Budget Application there that you can pull up on the screen? Okay, could we go to B-22 from Hydro's 2004 Budget Application? And, Mr. Haynes, this was your application last year seeking budget funds for 2004 relating to this same project, as I understand it, right, stack #2?
A. Yes.
Q. Okay, and the civil structure. And what we had was an amount for 2004 of $78,500 and then an estimated budget of--in 2005 of two million one five.
A. Yes.
Q. Okay. So I wonder if we could just go back to B-21 now of the current application, if we could just scroll down. So did this project just get pushed out for a year, the 2004 figure is $78,500, so that would be in the

Page 208

detailed engineering work that you did this year?
A. No, that's not completed at this point in time.
Q. Okay, that's the explanation then of why the 2005 figure would not have varied at all between last year's project application and this year's projection application?
A. There's been no detailed review at this point in time, that's work that basically is in progress now and probably as we speak, but it will be done by the end of the year to do a review, you know, get bid documents in place and so on ready to go.
Q. Okay, so the estimates, if you will, or the costing data that Hydro is providing here for 2005 is based on the, presumably the same information that you used to derive that identical number in 2003 when you were submitting your budget for 2004?
A. Yes, and the last job basically was less than two million--was approximately a hundred thousand dollars less than this, so it's just a minor refinement for escalation; we anticipate similar costs.

Page 209

MR. KENNEDY:

Q. Okay. So can I ask you, going forward here what would you--what would be your opinion on a reasonable tolerance around that estimated cost right now of two million one?

A. Typically our estimates are, you know, obviously they vary but, you know, plus or minus ten percent is a number that we would use from a budgetary point of view, including the contingency. I would like to add that in the previous job, we came in approximately one percent under budget which I thought was pretty good and I have no reason to think at this particular time we would be significantly different on this particular job.

Q. So if this one isn't--if I gather correctly an MPV driven product, if you will, it's an obsolescence in safety driven project as argued by Hydro, correct?

A. That's correct.

Q. All right, and so we don't have that same, if you will, check like we would in a project we just looked at, Snook's Arm, where we have an MPV that may get affected in your project goes out of scope?

Page 210

A. No, this is basically justified because of the condition of the current stack and the safety aspects. It's a must do.

Q. I'm sorry?

A. It's a must do. We have to do this particular project.

Q. Right, so in the first one, in Snook's Arm, if the project goes out of scope and ends up placing into doubt, if you will, the financial viability of the project by virtue of turning those positive net present values into negative ones, then that's a clear indication to Hydro that you would need to rethink the project, correct?

A. Certainly.

Q. Okay, in a case where we don't have a net present value calculation, the project is not being justified on operating efficiency gains or just a spend money now, save it over the long term scenario, can we use a plus or minus ten percent figure as a reasonable tolerance for when a project starts to go out of scope, when a project has exceeded what your reasonable engineering judgment estimate is?

A. I'm reluctant to agree with that because this

Page 211

particular project, as I say, is a must do and if it was two and a half million dollars, in my view, we'd still have to complete the job to ensure the availability and maintainability of the plant. So I think it's quite--you know, it's different from that point of view, I think projects that are justified based on this, they, you know, the estimates that we provided in the past have been reasonable. We had no reason to think that we're, you know, significantly off base with our cost estimates. As I mentioned, this one was one percent off in 2003 which I thought was pretty good.

Q. No, excellent, and I think there might be a slight misunderstanding, it's not a question aimed at determining when the project should be questioned in the sense of you put forward, if we just accept the assumption that it's a safety driven project, so that you have to have it done -

A. Uh-hm.

Q. And you're saying it's going to cost two million one and that's what this panel, for instance, if it were to approve that project,

Page 212

that's what its approval is based on, is that estimate of how much is it going to cost to fix this?

A. Yes.

Q. I'm trying to get a sense of from your engineering perspective when do you consider a project to have gone outside the original scope and keeping in mind that it's the panel here approving this project on the basis of the number that you've represented in B-21?

A. I don't have a number.

GREENE, Q.C.:

Q. Although I would point out that the only thing Hydro is asking for is approval of the engineering study to be done and we will be back in 2006 with respect to the refined cost estimate following the engineering study, which at that time we will be asking the Board to approve the capital cost for the actual work.

HUTCHINGS, Q.C.:

Q. I'm sorry, Mr. Chair, I didn't understand that intervention with respect to this project.

Page 213

MR. KENNEDY:
Q. Yes, I was just going to ask for clarification. I thought Hydro is asking for, on this one, I believe counsel that Hydro is asking for approval of the full two million for 2005, not the engineering?
GREENE, Q.C.:
Q. Is that the right one on the screen?
MR. KENNEDY:
Q. Yes, this is your 2005 Capital Budget Application.
GREENE, Q.C.:
Q. Oh, sorry.
MR. KENNEDY:
Q. And it might have been my flipping back and forth because I was looking at the 2004 a minute ago.
GREENE, Q.C.:
Q. Sorry, I thought you were talking about -
MR. KENNEDY:
Q. Right. So Hydro is looking for approval to go ahead with this actual project in 2005?
A. Yes, at an estimated cost of two million dollars.
Q. Right. You're conducting the detailed

Page 214

engineering study while we go through this, and you believe that your budget estimate here is accurate and that you should come in within, close to that figure once the project finishes in 2005?
A. Yes, we should be reasonably close to that number.
Q. Okay. And you expressed a figure of plus or minus ten percent as being, in your view, an acceptable range for a project of this size?
A. From a budgetary point of view, that would be a typical number. I mean, we've obviously come in under or come in over on some projects, depending on the nature of the job or unknowns.
Q. Is there anything significant from a procedural perspective, Mr. Haynes, inside of Hydro that's triggered off by virtue of a project going over more than ten percent budget? Do you need to report back up to, for instance, your board of directors or the like?
A. There is a sign off, if a capital budget that's in place exceeds a certain variance, it has to be signed off by the VP, depending on the amount and it goes from there. And

Page 215

there's also, I think, regular reporting to the Public Utilities Board on our capital program I think on a quarterly basis.
Q. Sure, there's regular variance reports issued to the Board, sure.
A. Yes, and that would be the vehicle to inform if there's a change.
Q. Sure, I'm thinking more of the internal structure of Hydro, you said if a budget goes over ten percent, it requires further authorizations inside of Hydro or someone needs to sign off -
A. Yes, I, as a VP, would have to sign off for any capital budget increases beyond the, I forget the number offhand, but I'd have to sign it off. And if it goes extraordinary, you know, significantly off, I would have to go to my boss, obviously and seek further--and I believe there's probably provisions to go to our board of directors if it's a major difference in the cost that we anticipate.
Q. Right, well it wouldn't be the first chain of command. In your chain of command, you use the ten percent figure, that's what triggers your requirement to sign off?

Page 216

A. No, what I meant was a ten percent change would be the, you know, the typical accuracy of a budget or estimate that we would anticipate that would be plus or minus ten percent. And I forget the actual percentage number where I would have to be, to actually sign a change order, I don't recall off the top of my head.
Q. That's all the questions I have, Chair, members of the panel. Thank you.
CHAIRMAN:
Q. Thank you, Mr. Kennedy. Any re-direct Ms. Greene?
GREENE, Q.C.:
Q. Yes, I do have a couple. The first is with respect to the Upper Salmon Power Canal, which is B-5, and I don't think we need to go to it, but in your discussion in response to questions, you referred to the Dyke Board. Is it correct that the Dyke Board is a group of national experts that are recognized internationally with respect to dams and dykes?
A. Yes, they are all internationally recognized who work in all areas of the world on dykes

Page 217

MR. HAYNES:
and dams and hydro facilities.
Q. How long has the Dyke Board been providing that external expertise for the dams and dykes for Hydro and for Churchill Falls?
A. For Churchill Falls it's been there many, many years and for Hydro, I think it started in the early to mid eighties that we actually engaged the Dyke Board and we've maintained them ever since.
Q. Mr. Coxworthy asked you questions with respect to whether there was new information further to the report that he referred you to dated 1999. With respect to the Dyke Board, have they visually inspected the Upper Salmon Power Canal since 1999?
A. Each year they inspect that particular canal because of their concern and they also review any data, piezometer data and so on at Bay d'Espoir. They actually do a one-week visit to the Hydro system and look at all those particular aspects.
Q. So they review the information that would, on a subsequent to 1999, each year we may visit, is that correct?

Page 218

A. That's correct.
Q. And they do a visual inspection and actually walk over the dam, is that correct?
A. That is correct. I, unfortunately, have not accompanied the current Dyke Board at Hydro, but I have accompanied in CF(L)Co several times and I do literally walk and crawl all over the dyke doing what geotechnical people do.
Q. Following the annual inspections from the Dyke Board, what is the Dyke Board's recommendation with respect to the requirement to do the stabilization work for the Upper Salmon Power Canal in 2005?
A. They consider this to be urgently required and in fact is why we bought this capital budget forward to the Board last year or earlier this year.
Q. And after the review of the Dyke Board's recommendations by a Hydro engineering group who are specialists in dams and dykes, what was their recommendation?
A. I'm sorry, can you repeat that?
Q. The internal engineering staff at Hydro-- first, do we have engineering staff who are

Page 219

viewed as experts in the maintenance and construction of dams and dykes?
A. Yes, we have some engineers who are dedicated to dyke and dam work and their review of this particular thing, they concur that there is an issue that we have to address.
Q. And again, they concur with the recommendation of the Dyke Board and brought it forward to executive management that it was critical to undertake this work in 2005?
(4:30 p.m.)
A. Yes, we have to--we're not necessarily absolutely certain that the suggestion of the Dyke Board may be the ultimate solution, but we do have to do something, Acres were retained, the Dyke Board are engaged and we will arrive at the appropriate remedy.
Q. The next area with respect to work be acquired for various fuel tanks to meet legislative requirements, with respect to the underground fuel tank, there are two in this particular budget. One is at B-9, the upper Salmon and the other is at Hydro Place. Does Hydro have any other underground fuel tanks that do not comply with current environmental

Page 220

requirements?
A. Yes, we have one more underground fuel tank that will be in a future capital budget and that is at the Cat Arm facility.
Q. You mentioned that Hydro has had discussions with the Department of Environment with respect to these items of non-compliance. First, when were the items of non-compliance actually know and determined and how did that occur?
A. We do an environmental audit where we go through and look at our compliance with legislation and some of these particular issues were picked up in the audit process where we go through and look at all of our facilities and look at the environmental regulations and the approvals that we have in place and to ensure that they are being done and that the appropriate testing etcetera is being carried out. And these were arrived at through this audit process.
Q. And the determination of what tanks to be done to meet the current requirements was discussed with the Department of Environment and they're aware of Hydro seeking approval to have these

Page 221

GREENE, Q.C.:
done in this time frame?
A. Yes, they're aware of our plans for tank remediation.
Q. And that is one of the reasons that Hydro has not been charged with violations with respect to the current legislation because of its program to address the issues?
A. That's correct.
Q. The next and the last question for re-direct was with respect to the upgrade of the control system that Mr. Hutchings just referred you to, in B-16. And I wonder here if we could go to IC-58 please, and I could just refer you to line 16 and 17. For the record, Mr. Haynes, can you confirm that the Foxboro proposal actually was the lowest evaluated bid with respect to the supply of this system?
A. Yes, it was.
Q. So, it was a lower cost effective solution with a lower cost to the rate payers, is that correct?
A. That's correct, the lower--it will be the lowest cost long term solution.
Q. I'm sorry, the last question actually is with

Page 222

respect to Mr. Hutchings' questions with respect to the alternative that was done for Snook's Arm and the levelized cost for that. The analysis that we provided today in response to the undertaking number 8, you mentioned, in going through that, that the alternative we used was combustion gas turbine, is that correct, combustion turbine?
A. For the capacity, yes.
Q. Yes, for the capacity. Mr. Hutchings pursued with you that at the time we would replace, in 2010 or 11, it looks like we will be replacing for capacity and energy, is that correct?
A. That's correct.
Q. The alternative to that would be used at that time, isn't it correct, Mr. Haynes that that would be more expensive than the gas turbine that was used in this analysis?
A. That is, more than likely, that is almost an absolute.
Q. In fact, if that had been used, this would even look better for Snook's Arm, isn't that correct?
A. Yes.
Q. Thank you, those are the only questions I have

Page 223

on re-direct.
CHAIRMAN:
Q. Commissioner Powell, do you have any questions.
COMMISSIONER POWELL:
Q. No, I have no questions, thank you.
CHAIRMAN:
Q. Commissioner Martin?
COMMISSIONER MARTIN, Q.C.:
Q. I'd like to know what happens to the mussels, but -
A. We contract with Crosbie's, I believe, to haul them away, I guess, he takes them to Robin Hood Bay.
CHAIRMAN:
Q. Once they go through the vacuum truck you don't want them. Well, that pretty well wraps things for this evening. I guess the only thing we have to finalize now would be in terms of the, some comments to the parties with regard to where we might be headed from here in terms of the time frame. Mr. Kennedy, you've had some discussion with the parties, can you indicate where we might be in terms of finishing tomorrow as opposed to extending

Page 224

over.
MR. KENNEDY:
Q. It's difficult to get some visibility on it. In light of--we have the VHF project to proceed through tomorrow which is a special panel for, I understand from counsel for Hydro that that will take half an hour to 40 minutes to go through their presentation. We've got then also the IS & T witnesses to answer specific question relating to that part of it. And then, of course, it's the chief financial officer for Hydro to be called last. In light of these speed at which we proceeded over the last two days, I would suggest that it's probably unlikely that we'll finish tomorrow in realistic terms. And therefore it may be necessary to or a good idea to canvas the counsel to see what their availability is for next week in order to be able to continue the hearing and in order to finish it off. And I'd suggest we'd need one more day to ensure that you get it finished.
CHAIRMAN:
Q. Is one more day in realistic terms, is that something that would include argument of the

Page 225

CHAIRMAN:
parties or -
MR. KENNEDY:
Q. Typically, counsel like to have another break after the evidence before they actually are called upon to do submissions. I don't know if the Panel is looking for written submissions or that hasn't even broached yet as a specific topic or whether just oral presentations from counsel is what's required. If it was written submissions, for instance, you would avoid the necessity of having to try to find another day on which all counsel are available as well members of the Panel. That might be the way to address the submission issue.
CHAIRMAN:
Q. Okay. Do any of the parties have any comment with regard to what Mr. Kennedy has put forward in terms of how many days would be necessary?
GREENE, Q.C.:
Q. Well, from Hydro's perspective, the 2005 Capital Budget Approval obviously is a priority. Apart from concluding the hearing,

Page 226

we have argument and then we have the time it takes for the order. As we have indicated before and I believe Newfoundland Power has, it is helpful to the utilities to have approval earlier in the previous year than historically and we've moved with that to try to have the approvals early in order to make some orders, we can speed up and get the work done for the following year. So, our concern is being here--next week is the middle of October, we are very concerned with respect to a schedule. We obviously view it, from Hydro's perspective, as a priority. This is later than we've been here last year, October. And from our perspective, I can't, in terms of our time, I can indicate as Mr. Kennedy has, for the Mobile Radio Panel, we do have direct evidence which would take in the vicinity of time that he has indicated with the remaining witness, the IS & T Panel and then Mr. Roberts, we do not have very long direct evidence, nor no presentations for either one of those panels. So, from the time perspective, we will not be long with the other two areas.

Page 227

CHAIRMAN:
Q. Mr. Hayes, do you concur, that from your perspective another day would be sufficient to conclude the -
MR. HAYES:
Q. I would think so, Mr. Chair. Newfoundland Power is cross-examination of the remaining projects won't contribute materially to the length of the hearing. Tomorrow I should be available and beyond tomorrow, my wife's maternity may remove me from the picture, but I understand Mr. Alteen will be available next week and I think one day should do it.
CHAIRMAN:
Q. Very well, Mr. Hutchings, do you have anything to add to that?
HUTCHINGS, Q.C.:
Q. Yes, Mr. Chair, I think as Mr. Kennedy indicated, we would be probably a bit too optimistic to think that we might be able to finish all of this tomorrow. Certainly another day, I think would be sufficient to conclude it. I would have no difficulty with limiting the submissions to a written submission if that assists in the scheduling

Page 228

or the expeditious conclusion of the matter. The difficulty that I do have is that I am not available next week at all and Mr. Coxworthy, as the Board may know, is new to the process, and I don't think it would be realistic for us to expect that my involvement could be dispensed with given how far we are along with this now. And the fact that I'll be out of the picture next week, Mr. Coxworthy himself is unavailable for the early part of next week. So, we do see that another day would be quite sufficient, but unfortunately we're not available to do that next week.
CHAIRMAN:
Q. Okay. We're certainly cognisant of Hydro's position and the fact that they'd like to get an early decision on the budget for obvious reasons. I think everybody appreciates that in terms of Hydro's scheme of things. Certainly from the Panel's perspective, we have problems with dates for various reasons, obligations of the Panel members, as well as scheduling here at the Board office itself in terms of other hearings that are coming before the Board. We do perhaps have a couple of

Page 229

CHAIRMAN:
dates in mind, but bearing in mind the comments of the parties here today and we'll take that under advisement tonight and we'll finalize perhaps a further schedule tomorrow. And with that we can adjourn now and reconvene tomorrow at 9:30.

GREENE, Q.C.:
Q. Excuse me, Mr. Chair, you had said earlier, the schedule for tomorrow, you hadn't committed to the timing for the schedule tomorrow. Are you in a position now? Will it be 9:30 to 4:30 tomorrow or -

CHAIRMAN:
Q. Bearing in mind the comments of the parties, that one more day would be sufficient to conclude the hearing, was that based on a 4, 4:30 session tomorrow?

HUTCHINGS, Q.C.:
Q. Even without going to 4:30 tomorrow, I think another day will finish it. I think we can be flexible about how late we go tomorrow.

CHAIRMAN:
Q. Okay, well, I think we'll tentatively, you know, heard towards tomorrow with an idea of

Page 230

concluding around 1:30, but we'll leave that flexible and we'll see how people feel about it tomorrow morning.

MR. ALTEEN:
Q. What's the start up time, Mr. Chairman.

CHAIRMAN:
Q. 9:30.

MR. ALTEEN:
Q. Thank you.

Adjourned 4:42 p.m.

Page 231

CERTIFICATE

I, Judy Moss Lauzon, hereby certify that the foregoing is a true and correct transcript in the matter of Newfoundland and Labrador Hydro's 2005 Capital Budget Application, heard on the 7th day of October, A.D., 2004 before the Board of Commissioners of Public Utilities, Prince Charles Building, St. John's, Newfoundland and Labrador and was transcribed by me to the best of my ability by means of a sound apparatus.

Dated at St. John's, Newfoundland and Labrador this 7th day of October, A.D., 2004

Judy Moss Lauzon