(9:01 a.m.)

CHAIRMAN:

Q. I was writing down the date in my notebook this morning and I started out to put down July with a J and I thought it was probably more appropriate to call it January. However. I just wanted to mention before we begin, with this schedule change today we'll be only taking one break this morning and that will be on or about 10:30. And this afternoon we'll break for 15 minutes or so around 2:45. Any preliminary matters? There are some undertakings.

MR. KENNEDY:

Q. Yes, Chair, and I think that's the only preliminary matter.

CHAIRMAN:

Q. Okay. There are 17 I think according to the transcripts.

GREENE, Q.C.:

Q. Yes, Mr. Chairman, there are and with the consent of counsel, I was going to ask the appropriate witness on the Panel each one of the 17 to have the answer on the record. The first four will be addressed to Mr. Haynes and

they arise from the cross-examination of Ms. Andrews. The first undertaking is found on page 75 of the transcript at approximately lines 13 to 17 and they relate to the control system project for Holyrood which is found on page B-17 of section B. The question that was left with you as an undertaking, Mr. Haynes, was whether any of the alternatives outlined on page 5 of Tab 2 of section G, which was a--whether they reflect the manufacturer's short term recommendations that were outlined in the report filed in response to IC-27. Have you had the opportunity to review that?

MR. HAYNES:

A. Yes, I did and I guess as respect of both alternative two and three follow the short term recommendations as put forth by Westinghouse for all the relevant systems of Holyrood.

Q. The next undertaking is also found on page 75, going over to page 76 and it relates to the undertaking to provide the cost incurred by Hydro to install the four permanent ambient monitoring stations at the Holyrood plant. Mr. Haynes, can you now provide the cost for

that, please?

A. Yes, the total cost spent was $414,000 for the four current permanent ambient sites.

Q. The third undertaking is also found on page 75 at approximately lines 11 to 19 and it relates to the opacity meters also installed at the Holyrood plant and the -

HUTCHINGS, Q.C.:

Q. Excuse me, they're not all on page 75. I can't follow.

GREENE, Q.C.:

Q. Oh, I'm sorry.

HUTCHINGS, Q.C.:

Q. The second one, according to the transcript is on page 88.

GREENE, Q.C.:

Q. I printed off a version last night before the hard copy -

CHAIRMAN:

Q. It's always different than the printed hard copy.

GREENE, Q.C.:

Q. Perhaps if we just go by the number. It's the same order as they appear in the transcript. It may not be the right page number. As I

said, I printed it off before I got the hard copy off. The next one did relate to the opacity meters at the Holyrood plant. So from now on I won't refer to the page numbers, I'll just go through the undertaking. And there the issue was whether there was a specific project in 2000 related to the opacity meters. Mr. Haynes, have you checked with respect to this?

A. Yes. The opacity meters were intended to be installed during 1999 and two were. One carried over to 2000 so it was a part of that budget and the total cost was $398,000.

Q. And the installation of the meters occurred over the two year time frame.

A. Over the two year time frame but it was under one--a carry over, basically, because of various reasons.

Q. The last undertaking for Mr. Haynes was with respect to filing the brief referred to in the minutes of July 5, 2002 which were the minutes of a meeting with the Department of the Environment. We have copies of this brief that I have available to distribute at this time. And I guess this would have to be

Page 5

marked, Mr. Chair.

MR. KENNEDY:

Q. Reply to an undertaking.

GREENE, Q.C.:

Q. Reply to an undertaking.

MR. KENNEDY:

Q. So that would be U-Hydro number -

GREENE, Q.C.:

Q. One.

MR. KENNEDY:

Q. Number six.

GREENE, Q.C.:

Q. Number six.

CHAIRMAN:

Q. Number six.

GREENE, Q.C.:

Q. Mr. Haynes, this report is entitled "A Preliminary Review of SO2 emission at Newfoundland and Labrador Hydro's Holyrood Generating Station." Was this review finalized?

A. There was no additional report presented to the Department of Environment. Basically they did relax the minimum, the proposed minimum sulphur content. They increased I should say,

Page 6

from 1.8 to 2. But there was no further finalization of that report.

Q. So that discussion was with respect to the sulphur content in the fuel burnt at Holyrood, was it?

A. Yes, that's correct.

Q. That completes the undertakings for Mr. Haynes. Turning now to Mr. Downton, the first one that is noted in the transcript related to the corporate applications environment project which is B-59 and the undertaking related to the number of person hours required or anticipated and included in that project. Mr. Downton, have you had the opportunity to review that?

MR. DOWNTON:

A. Yes, I have. The number of person hours for the corporate applications environment is 5,100.

Q. The next undertaking related to project B-62, the security program, and the undertaking was to provide details of material supplied component. Can you please provide that information now, Mr. Downton?

A. Yes. The material supplied totals $30,000 and

Page 7

that's comprised of $7,000 for a server and $23,000 for software.

Q. The next undertaking related to the same project, project B-62 and it was whether the project would address the issue of the web server being outside the firewall. Mr. Downton, does this project address that issue?

A. The web server is outside the firewall and will stay outside the firewall.

Q. And why is it necessary to stay outside the firewall?

A. Basically because it's security, security reasons. That way all the traffic does not come to Hydro's network to get on the web server or the internet server.

Q. The next undertaking related to project B-66, the Evergreen Project and the undertaking relate to the cost of the five year plan for this project. Mr. Downton, what is the total cost for this particular project?

A. Basically the total cost for 2005, 2006, 2007 which is the last three years of the evergreen program was 3.9 million.

Q. What would be the annual cost anticipated or forecast for 2005?

Page 8

A. 2005 would be 1.5 million.

Q. 2005?

A. 1.2 million.

Q. And 2007?

A. 1.2 million.

Q. The next undertaking related to project B-62 of the security program again and it was an undertaking to provide the breakdown of the material supplied cost. Would you please provide that now?

A. Yes, basically the materials is to purchase the secure ID tokens.

Q. And the amount of the material supplied was?

A. 35,000.

Q. Or 30,000? Would you like -

A. Just a second.

Q. B-62.

A. Sorry. B-62 for the first year it's -

Q. 30,000.

A. Yes, 30,000. Oh I thought that was B-64.

Q. Sorry, yes, it is B-64.

A. 35,000.

Q. 35,000 and it's all for the secure tokens.

A. Yes.

Q. The next undertaking related to the cost of

Page 9

the thin client. Have you had the opportunity to confirm the cost you indicated yesterday?
A. It's approximately $1,200.
Q. The next undertaking also related to the thin client and it was to provide information as to whether other alternatives other than the Neoware product were considered for the thin client use at Hydro. Have you had the opportunity to review that?
A. Yes. The Neoware EON Preferred Series 3000 Thin Client, the HP EVO T20 Thin Client and the Wise Winterm 3235LE Thin Clients were looked at.
Q. Why was the new ware thin client selected of the alternatives that were considered?
A. The neo ware thin client was the preferred technical solution.
HUTCHINGS, Q.C.:
Q. I'm sorry I didn't hear the model number for the HP device.
A. Sorry, HP EVO T20.
GREENE, Q.C.:
Q. The next undertaking related to the desktop pub used by Hydro in the evergreen project and the undertaking related to the type or model

Page 10

of the desktop. Would you please advise what that is?
A. Yes, it's an IBM Think Centre S-50.
HUTCHINGS, Q.C.:
Q. Which centre?
A. Think Centre.
Q. Think?
A. Think. Think Centre S-50.
GREENE, Q.C.:
Q. That's think as in T-h-i-n-k.
A. Yes.
Q. And the next undertaking was with respect to the cost of the desktop, what is the approximate cost of the desktop?
A. Approximate cost is $1,600.
Q. The next undertaking related to the thin client for Hydro and whether the contract with IBM included the supply of the thin client device. Does the contract include the thin client devices?
A. Yes, it does.
Q. The next undertaking related to the type of laptop and the cost of the laptop that is proposed for the project.
A. The laptop is a Think Pad T-40 and the

Page 11

approximate cost is $2,800.
Q. The last undertaking related to providing the best practices of the Garner group with respect to refreshing end user infrastructure. We have available copies of this document now for the parties. It is copyrighted and we received the permission of the Gartner group overnight to provide this to the Board and to the parties. And that concludes all of the undertakings that were given yesterday, so that answers have now been provided to all of the undertakings given to date in the hearing.
CHAIRMAN:
Q. Thank you. Would this be U-Hydro No. 7, Mr. Kennedy?
MR. KENNEDY:
Q. Yes, it would, Chair.
GREENE, Q.C.:
Q. Thank you, Mr. Chairman and Commissioners.
CHAIRMAN:
Q. Thank you, Ms. Greene. Now then Mr. Hutchings are you -
MR. KENNEDY:
Q. Sorry, Chair, that's U Hydro No. 17. Although it's the next document put in -

Page 12

CHAIRMAN:
Q. Okay, I'm sorry.
MR. KENNEDY:
Q. - we'll match it with the undertaking number.
HUTCHINGS, Q.C.:
Q. So the other one becomes 16, is that right?
CHAIRMAN:
Q. No, that was number 6.
MR. KENNEDY:
Q. That was number 6.
CHAIRMAN:
Q. Oh, in response to--yes, fine, I have you.
MR. KENNEDY:
Q. It was in response to undertaking number 6 and this is in response to undertaking number 17.
GREENE, Q.C.:
Q. The only question I had is we also answered two yesterday. I don't know if you're keeping track of the undertakings. Okay. There were 17 from yesterday and two from the day before.
MS. THISTLE:
Q. Yes.
CHAIRMAN:
Q. Are the numberings okay?
MR. KENNEDY:

Page 13

Q. Absolutely. The Board secretary has it fully in control.

GREENE, Q.C.:

Q. I'm sure Ms. Thistle is.

MR. KENNEDY:

Q. We'll verify that though and -

CHAIRMAN:

Q. Very well. So, Mr. Hutchings, are you ready now to continue?

HUTCHINGS, Q.C.:

Q. I'll continue at this point, Mr. Chair. Obviously I'm going to need a little bit of time to look at some of the material that came out of the undertakings and I'll do that perhaps during the break and might have some further questions to go back on that.

MR. ERIC DOWNTON EXAMINATION BY JOSEPH HUTCHINGS, Q.C.

HUTCHINGS, Q.C.:

Q. Thank you, Mr. Chairman. Good morning, gentlemen. Mr. Downton, I'm just wondering first of all if you have any additional information in terms of the specifications of the particular devices that you're talking about, the desktop computer, for instance, you know, do you have details of the capacity, the

Page 14

speed, any of that information?

MR. DOWNTON:

A. In my understanding that would be defined by the information that I give you, the model number.

Q. Okay, so it's a standard S-20 Think Centre desktop.

A. That's my understanding, yes.

Q. No additional bells or whistles or additional memory or anything like that?

A. Not that I'm aware of.

Q. And equally with respect to the Think Pads and the thin client devices.

A. That's correct.

Q. They're the standard models.

A. Yes.

Q. And I take it when you called for the proposal to provide these things you didn't have any special requirements that were unique to Hydro's network or anything of that nature, did you?

A. No.

Q. These were just standard pieces of equipment that could be found in any office.

A. Yes.

Page 15

(9:17 a.m.)

Q. In respect of the secure access project and the $35,000 for these tokens, how many tokens are we talking about, do you know?

A. If you do approximate math it would be about 280 tokens.

Q. 280. Just come back for a moment to a project at B-62, the centralized log monitoring and analysis system. You told us this morning that of the material cost there was provision for $7,000 for server and $23,000 for software, is that correct?

A. Yes.

Q. And in the project justification, there's discussions of the numerous system application logs that keep track of any user activity within the Hydro groups networks and this project will centralize all that logging activity and produce meaningful reports for the information. That's your intent, is that correct?

A. Yes, that is the intent.

Q. Does this project effectively involve backing up everything on Hydro's system?

A. No. Basically the intent of this is to

Page 16

review, I guess centralizing access to the logs and a part of any logs would be a backing up, yes, the actual logs that you--for preservation purposes. But I'm not sure if that's what you mean.

Q. Well, one of the things that the project justification talks about is, and that's in the third last line from the bottom page of B-62, "Users have the right to expect that the data they work with on a daily basis is not disclosed to unauthorized individuals and not destroyed or modified either intentionally or accidentally." How do you go about preventing intentional or accidental destruction of data without backing it up?

A. Well basically all of our corporate information is backed up. Basically, that's automated as part of the server infrastructure. And, basically, the log--the centralized log monitoring, that interfaces with the servers to ensure that there's no security breaches from access to the servers.

Q. In order to meet the goal that you've set here you basically have to back up every piece of data on the system, correct?

Page 17

A. We back up corporate data based on a certain defined cycle. Like the JD Edwards information, we back that up. The server information that everyone has on the server, I mean that's backed up on a routine basis but that is separate from this centralized log monitoring system. The log monitoring system actually ties into the servers that back up this information and the intent of this is to provide a centralized mechanism to ensure that the information is backed up and that there's no security breaches with regard to that information.

Q. Yes. I understand the intent is directed toward security issues but I mean if you are going to prevent the accidental or intentional destruction or modification of data, do you have some way of doing that without backing up all the data on the system?

A. Can you repeat that?

Q. If, as the document says, the intent is to prevent either the intentional or accidental destruction or modification of data, how can you do that without backing up all the data on the system?

Page 18

A. Again I'm not sure where exactly--the inference of the question.

Q. I mean in your document here at the bottom of page B-62, you're saying that users have the right to expect, among other things, that the data they work with will not be destroyed or modified either intentionally or accidentally.

A. Yes.

Q. And you're saying that this project will provide the assurances that this will not happen. So how does that work?

A. Well basically, the inference of what that means is that we are monitoring the security features of the services, of the various servers, of the tape back-up units to ensure that the back-ups are carried out and executed in a timely basis and that unauthorized personnel do not get access to these particular pieces of infrastructure.

Q. No, the unauthorized access is a separate issue from the accidental or intentional destruction or modification of data, okay. I mean it may be that somebody will attempt to get unauthorized access for the purpose of destroying data but let's talk about

Page 19

accidental destruction of data. This system you tell us is going to prevent accidental destruction of data.

A. That's not what--what I said, the inference is not that. The inference is to ensure that when the data is backed up, that it's secured and that we'll say unrestricted or that access to the information is restricted to those having proper security clearance.

Q. When you say inference, do you mean intent?

A. Yes.

Q. So the intent is security.

A. Yes.

Q. What I'm asking you is how you get there. And I don't see any other way you can get there with respect to protection against accidental destruction of data unless you're backing everything up.

A. We are backing up the information, yes.

Q. All the information.

A. Basically corporate information is backed up and secured.

Q. What do you mean by corporate information?

A. Basically JD Edwards system is backed up, the energy management system is backed up, the

Page 20

lotus notes e-mail system is backed up, the server infrastructure that carries all of the files, file information is backed up.

Q. So this system will give you the capability of looking at every e-mail that comes in to the Hydro system.

A. The intent of this system is not to go down to that level. The intent of this system is -

Q. Excuse me, my question was not directed toward intent, my question was directed toward your capability and does it or does it not give you the capability of looking at every e-mail that comes into Hydro place?

A. No.

Q. Why doesn't it do that?

A. Not through this system. Basically if you want that level of detail then what you would do, you would go through our security procedures and the system administrator would then go into the features within the lotus notes system and get that specific information.

Q. So you can do that already, in other words, before you do this project.

A. I can do that particular piece, yes.

Page 21

Q. You can access any e-mail that anyone receives within the Hydro system.
A. I can--well we can access any e-mail through existing security.
MR. HAYNES:
A. Could I interject if -
HUTCHINGS, Q.C.:
Q. Sure.
A. From Hydro's point of view I mean basically we do assure that our employees do have reasonably secure access to their e-mail and that basically their privacy is looked after. If it is determined that there is suspicious activity on the go or some, you know, illegitimate use of the e-mail system and we have reason to believe that IS&T do not have the right to go and arbitrarily open someone else's e-mail. There's a process and procedure in place to ensure that's done in an effective manner to give people assurance that they can work without somebody always peeping. We don't go in and look at people's e-mail unless there's a specific defined reason. From a security point of view as a user, if I could, my understanding of this project was

Page 22

that when I work with a system file that if somebody's--if we--at the moment we had all these logs that are being generated, it is physically impossible for someone to go and review every line entry on a log which basically is thousands of lines which is--this system will help to narrow down the scope of where suspicious activity has taken. So if anybody internally or externally is trying to get at some system file, then it will be flagged, picked up by the security people and they will be shut out, turned off, checked on or whatever the case was. The back-up and all that, that all happens and we keep it for a defined period of time before it's all relieved or kept as permanent archive.
Q. So, if I'm understanding the project justification correctly, then the system and the application logs are already there and this is basically an indexing or an access system.
A. To help narrow the scope to suspicious activity. Right now there are literally thousands of logs that are generated for e-mail, for web access or whatever the case is

Page 23

and it's just not physically possible for someone to go down through every line item. This is to aid that review.
MR. DOWNTON:
A. Now to give you I guess a scope, you're looking at tens of thousands of events logged on a daily basis or on a monthly basis. And this tool will help in the dissemination and the filtering of that information so we can be proactive when it comes to security issues relating to our infrastructure.
Q. So your existing system tracks user activity and this is a tool to allow you easier access to specific topics or subjects that may have been dealt with on your system, is that correct?
A. Currently there are logs generated across multiple systems that we have and this system will consolidate all of those logs into a centralized application and provide additional filtering and abilities to assess, again, the example of 27,000 alarms monthly.
Q. 27,000 alarms?
A. Well basically events I should say.
Q. I just want to understand what you're saying.

Page 24

Now what do you mean when you refer to an event?
A. Basically just a log, basically it could be the fact that someone either tried to gain access to Hydro's network from the outside, a hacker trying to get in. Or it could be the fact that one of the network administrators went in and accessed the server or it could also be the fact that certain back-ups were or were not executed on time. It could also indicate that certain people basically are going out through the firewall and trying to make connection to external devices out through the firewall. These are all types of "events" that may happen and will be monitored by this particular system.
Q. And you have 27,000 of these events a month, is that what you said?
A. Yes.
Q. And from your description, I take it that each of these events are things that should not in the ordinary course be happening?
A. Some of those events happen in normal course and I guess what we are looking for are the tools so that we can filter the normalcy

Page 25

events and be proactive on the events which need to be probably addressed.
Q. Mr. Downton, if we could move now to B-69. This is your project for peripheral infrastructure replacement. And is it fair to categorize this again as an annual allotment?
A. Yes.
Q. You say there's a five year replacement program for peripheral equipment in place, what year of that are we in?
A. Well basically this is a continuing cycle because most of the printer technology only has a useful life of five years. So, typically, you were always cycling through the replacement and upgrading of peripheral/printer type of infrastructure.
Q. What has led you to the conclusion that printer technology has only a five year life?
A. Basically most of what we see in the industry indicates five years. Occasionally you'll get a little bit longer but the typically accepted standard is five years. Some cases you'll get six, seven, eight years but the generally accepted standard is five.
Q. And do you rely on Gartner research in that

Page 26

regard as well?
A. We rely on a lot of research.
Q. My question was do you rely on Gartner research?
A. We look at Gartner research but we look at other information.
Q. In response to IC-33, you provided a list of the printers, projectors and scanners and other peripherals intended to be replaced under this project. I can't always tell from the description what's a printer and what's not, but it looks like there's about 57 printers there to be replaced.
A. No, basically it indicates that 57 printers are basically coming out to be removed from service, we are not replacing 57 printers. And two LCD projectors will be replaced.
Q. How many printers will be acquired to replace the 57 that are listed here?
A. We're installing a multi-functional device in Bay D'Espoir. We're basically installing five HP Laser printers and two colour printers and HP plotters.
Q. Did I understand you to say that this is all what's going in Bay D'Espoir?

Page 27

A. No.
Q. No.
A. What I said, the Xerox multi-functional device will be going in Bay D'Espoir.
Q. Yes, okay. And when you say multi-functional device, I take it that's a printer, fax, copier -
A. Scanner, yes.
Q. Scanner. Does it do all those things or just two of them?
A. It basically, depending on what you want, you can pick any of those functions and you can design it for any size of office.
Q. So you haven't determined what particular piece of equipment is going there, have you?
A. Yes.
Q. So is it one that does all of these four or five functions?
A. I don't know if it does every one of those functions.
Q. So to get back to my question, with respect to the 57 printers that are being taken out of service, how many are being acquired to replace them?
A. Well when you consider that the multi-

Page 28

functional device is a printer, we're looking at replacing it with eight units.
Q. Pardon me?
A. Eight.
Q. Eight?
A. Yes.
Q. And one of these is going to Bay D'Espoir.
A. Yes.
Q. And seven are going to Hydro place?
A. The other seven I don't have definitive locations where they will go.
Q. Do you know where most of these 57 are now?
A. Yes.
Q. Where are they?
A. I don't have that detailed list but we do have--there is a list which defines that.
Q. Is it fair to say most of them are in Hydro place?
A. To be honest, I don't know.
Q. You don't know, okay. I'd like an undertaking that that list be provided as to the locations of these devices. (UNDERTAKING) How many of these devices have ceased to function?
A. I do not know exactly how many devices have ceased to function. We basically removed them

Page 29

when they either ceased to function or basically because we can no longer get parts for them.
Q. Now, I had understood from your earlier answer that printers were replaced after four years, is that correct or not?
A. What I basically indicated that the typical life cycle for a printer is five years.
Q. How do you make your decision as to when to replace a particular printer?
A. We basically look at the--primarily we focus on the age of the unit and also we would look at if we're having significant problems with a particular printer.
Q. I mean some of the items that you have here were acquired in '86, '89, '91, is there a particular reason why these were not replaced earlier?
A. Some of these printers have been out in the field in place and I guess over the last--and a lot of them were dedicated units and since about 2001 when we rebuilt our wide area network--our wide area network infrastructure allowed us connectivity. So basically since then we've been continually removing a lot of

Page 30

these units from service.
Q. I notice you are replacing a number, a good number of Hewlett Packard LaserJets that were acquired in 1998, is there some problem with these devices?
A. All I know is that it's recommended that they will be replaced.
Q. And you don't know whether or not these devices are performing their function at this point, do you?
A. I would assume the fact that we're recommending that they replace that they are not performing their function.
Q. Items number 13 through 17 are all Hewlett-Packard LaserJets from IC-36, all acquired on July 1, 1998?
A. Yes, that's what it says there.
Q. Do you know of any reason why all of them would stop functioning now?
A. No.
Q. Do you know of any reason why all of them would stop functioning now?
A. No.
Q. Do you know what you're paying for the LCD projectors? I understand you're replacing

Page 31

two--you're acquiring two new -
A. The two units, approximately $13,000.00.
Q. $13,000.00 in total?
A. Yes, sorry, sorry, sorry, LCD projectors, is three units, $10,000.00 total.
Q. Three units, $10,000.00 total. So, that leaves $63,000.00 in your material supply for eight printing devices, is that correct?
A. That's the math, yes.
Q. Okay. Are all of these going to be these multi-functional devices such as you're putting in Bay D'Espoir?
A. There's one multi-functional device going in Bay D'Espoir. There's five hp LaserJet printers and one colour printer and one HP plotter.
Q. Okay. And do you know what you're paying for the hp LaserJets?
A. Basically, approximately $4,000.00 a unit.
Q. $4,000.00 per unit, okay. And do you have the prices on the other items that are being acquired?
A. The estimated cost for the colour printer and HP plotter is $13,000.00 for two units. And the estimate cost the multi-functional device

Page 32

is $30,000.00 per unit which will give you a total of $73,000.00.
Q. How many employees do you have at Bay D'Espoir now?
MR. HAYNES:
A. In the Hydro generation site at Bay D'Espoir, in a group, there are a few more employees in that group than there are at Bay D'Espoir, but there's about 80 or so.
Q. Eighty?
A. Eighty in the permanent employees. Actually the Hydro footprint, if you will at Bay D'Espoir is about 95 or 96 total, there are some TRO employees there as well.
Q. Okay. How many people would work in an office setting in Bay D'Espoir?
A. When you say in an office setting, they all have access, maintenance planning is done there, so probably 30 to 40 percent would have normal routine access, but there are other areas over in the TRO section as well for work orders and so on.
Q. What other printing devices would be in Bay D'Espoir aside from this new one when it goes down there?

Page 33

MR. DOWNTON:
A. I would suspect that in the out buildings, what I call the out buildings, from Bay D'Espoir, there would be probably an hp LaserJet printer.
Q. So, in your principle office in Bay D'Espoir there will now just be this one unit?
A. Typically what we do with the multi-functional devices, we put that as the primary unit and we always put a back-up hp LaserJet just in case a multi-functional device fails, there are still print services available.
Q. Do you know how many secretarial or clerical staff are in Bay D'Espoir?
A. I defer that to Mr. Haynes.
MR. HAYNES:
A. Not offhand, but there's probably--the people who normally work in the office environment, there's not only clerical staff there. There are maintenance planners who use these things on an ongoing basis.
Q. I understand that, yes.
A. So, you specifically what clerk, clerical, secretaries?
Q. Yes.

Page 34

A. There's probably about half a dozen or seven, total, five or six at least.
Q. Could you look now at the B-77, it's the Remote Terminal Unit for Hydro. I take it from the description of the operating experience here that these units are continuing to function in the ordinary way as of this date, is that correct?
MR. DOWNTON:
A. They're still in service.
Q. Okay. And there have been, according to your own information, a few failures in the equipment to date?
A. There's been a few failures as (inaudible - coughing) in operating experience.
Q. What do you have in inventory by way of spare parts for these units now?
A. I would suspect that for these units, there are minimal spares, primarily because the units are, well, some of them are over 20 years. Manufacturer--we haven't been able to get spare parts for the Quindar remote terminal units and Westonic, those companies don't really exist as far as manufacturing these devices anymore.

Page 35

(9:45 a.m.)
Q. And in answer to a couple of my questions, you said, I would suspect that such and such. I mean, are you basically drawing that conclusion from the fact that somebody has written down what they've written down here?
A. No, basically I gained that information from the fact that, conversations with our staff.
Q. Okay. So, I just want to try to establish a level of information that's being passed up through here. I mean, have you specifically discussed the availability of spares for these particular units with someone within your staff within the past month?
A. Not within the past month, no.
Q. Okay, all right. What efforts has Hydro made to acquire spares for these units?
A. As I said, these units have not been manufactured for a great number of years. Hydro does by spare parts for the units and as part of it's normal operational support for this and from what I can remember, we did look at this a number of years ago (inaudible - coughing) the parts are not manufactured anymore.

Page 36

Q. Understandably when you find out that the manufacturer is not longer producing spare parts, presumably there are other places you can go to look for those spares parts?
A. I don't--well, for me, I don't know specifically of other places for used spare parts for RTUs. There may be, whether they've gone to those particular places to look, I don't know.
Q. You say, whether they've gone, you mean, whether somebody within the Hydro group has gone.
A. Whether, basically, people in network services (inaudible - coughing) have gone there.
Q. And you don't know whether or not that has happened?
A. No, not definitively.
Q. Can you describe for us the level of risk, if any, that Hydro would face if these units were not replaced in 2004?
A. Well, yes, if I were to look at the particular sites, Cat Arm, Hinds Lake and Happy Valley, those are--well, Cat Arm and Hinds Lake, in particular are two unmanned hydro-generating stations. Basically failure of the remote

Page 37

terminal unit will basically incapacitate the energy control centre from being able to dispatch generation to those particular sites or not being able to control the water within the various structures at those particular sites. If you look at Cat Arm, in particular, especially in the winter, that is a very difficult site to gain access to. So, what you would be looking at is the risk of incurring significant outages and incurring, I guess, other than outages, having to man the plant, that requirement was there for an extended period of time.

MR. HAYNES:

A. Could I add to that comment. On the RTUs, basically Hydro only has three manned installations, Bay D'Espoir, Holyrood and Energy Control Centre. The RTUs are the lifeline connection to allow us to operate these system without having people there 24 hours a day. None of our terminal stations are manned, there's RTUs in each and ever installation. And what Hydro has been doing is trying to be proacted to ensure that we have control over all the terminal stations

Page 38

and all the generating units of which we have remote controlled so that we do not have to man these stations. And I guess after 20 years of the RTU being in service, that the risk of failure of any of these, if--it would not take long and if you go down to do--a detailed risk analysis has not been done. This is a judgment based on, you know, 30 years of operating history with the RTU and the personnel that we really need to change this to ensure that we can meet the needs of our customers, all customers. The other option is to man the stations and that's an extreme from this here.

Q. I understand what you're saying. I mean, are these single point of failure units?

A. Single point of failure units, I'm not sure how much -

MR. DOWNTON:

A. Yes, basically they're they single point of failure units. If the processor goes down, the unit is lost. They're not dual process or based units.

Q. And there is one unit for each plant or each -

MR. HAYNES:

Page 39

A. Terminal station. There may be multiple depending on the size of the plant or the terminal station. It depends on how many control points are there.

MR. DOWNTON:

A. Yeah, basically as far as I know, Cat Arm, Hinds Lake, Long Harbour and Happy Valley, there is one unit.

Q. One unit in each location.

A. Yes.

Q. And when was the last failure of one of these units?

A. I do not have that specific piece of information.

Q. Okay. Have you considered the possibility of replacing one of these units and using the unit that was taken out of service as a spare for the others?

A. No, and the reason being is that basically, the Quindar remote terminal units, all of them have been in service for the same period of time and basically, in particular with regards to the relaying systems and the analog and status, muxing systems on--all of them have aged and degraded at the same rate. And some

Page 40

of the analog input devices are time limited and from what I understand, there's no repair capability for these units because the components on them have been long since manufacturer discontinued.

Q. Is there any reason to think that all three of these units are going to fail at one time?

A. They've all agreed, they're not all going to fail at exactly the same time, but when you consider that all of the components have been active for 24 hours a day, seven days a week for twenty something years.

Q. That's what they're designed to do though, isn't it?

A. Most of these units are not designed to take you beyond 15 to 20 years. Most manufacturers will tell you, this equipment is rated for 15 to 20 years. There's no definitive cut off date as to when this infrastructure will fail.

Q. The estimated repair cost that you quote here is $1,800.00.

A. Yes.

Q. That's between--and the mean time between the failures has been seven years?

A. Yes.

Page 41

Q. That's what your operating experience has been.
A. Yes.
Q. And essentially you're telling the Board that a judgment has been made that you can't get another year out of any one of these units, is that correct?
A. What I'm telling the Board is based on, I guess, our experience with the technology. We are recommending for these units that they be replaced. And in particular, when you look at the sensitivity of sites that these systems are going to be installed, yes, I am recommending that they be replaced.
Q. And you have laid out your experience with the history of these units in this document at page B77?
A. Yes.
Q. Okay. If we can turn now for a moment to page B79. This is the phase 2 of your replacement of the operational data and voice network. And I guess we can harkin back a little bit to some discussion we had yesterday about the terminology that you used to describe the communications and data systems that Hydro

Page 42

utilizes. You speak here of a wide area network communications structure. What elements does that include?
A. I guess in a wide area network infrastructure is series of components that, in very simple, terms, takes voice and data streams at various points in the infrastructure--I'll try to give an example. Say, at Stony Brook Terminal station, we basically have an RTU there and we basically have, say, operational voice and probably other operational data requirements. A piece of wide area network equipment would basically allow that information, those different streams to be consolidated into one stream and sent down the network to, say, the energy control centre. And on the energy control centre end, there will be another device which would take that one stream and then break it back out to the original components that entered, say, Stony Brook. And then you would have multiple devices like this across this system at all of our stations and area offices. So, that, in an overview, is what a wide area network is.
Q. When we were discussing one of your project

Page 43

yesterday, we talked about what you called Hydro's intranet, Hydro's internet and Hydro's network, is this wide area network communications infrastructure? I mean, is that what you regard as being Hydro's entire network or are there other things that we'd have to add on in order to get to your full structure?
A. Let me just try to add a little bit of additional clarification. When we talk about local area network, we typically talk about a network within a particular site. So, within Hydro, there would be a local area network. Then -
Q. Okay. Just so I'm clear, do you mean within the entire company there is a local area network or is there a local area network at Hydro Place and another one somewhere else.
A. Right on. And then basically the wide area network connects all of these sites together.
Q. Okay. So, you would say you have a local area network in Bay D'Espoir?
A. Yes.
Q. And one in Hydro Place?
A. Yes.

Page 44

Q. Do you have any others?
A. Yes, we have them in Happy Valley, Wabush, Port Saunders, St. Anthony, Stephenville, Bay D'Espoir, Bishop Falls. We have them in Hinds Lake.
Q. Okay.
A. Basically, local area network is a mechanism whereby you connect devices to a network. And then your wide area network infrastructure allows you to connect all of these components together over the geographical area.
Q. In that context, where does what we were talking about yesterday as Hydro's intranet fit in?
A. The intranet basically is a--I'm just trying to think. The intranet would information on server within Hydro's network that's accessible by a browser or a web, a web type browser. That's basically, I guess, in very simple terms what an intranet (inaudible - coughing).
Q. I'm trying to, you know, relate this specifically to Hydro now because some of the terms I don't think are necessarily used in the generic sense, but I just want to

Page 45

understand what you're trying to convey to us. So, what you refer to as your intranet is anything that anyone on the wide area network can access?
A. Yes.
Q. Okay.
A. I'll give an example if you want.
Q. Sure.
(10:00 a.m.)
A. One of the things that's on our intranet are, say, we have a site called HR, an HR site and what it basically does, it allows any user across the organization with their end user device to go through the our network using a browser to gain access to information. That's an example.
Q. Okay, that's fine. So, what do you have by way of communications infrastructure that's outside of your intranet?
A. We have--the bulk of Hydro's network really is outside of the intranet. The intranet is only a small portion of Hydro's overall network infrastructure.
Q. So, what you're saying is that you define the intranet to be what people generally can

Page 46

access, is that fair?
A. No, I think that's an overstatement of the intranet and, I mean, again if you just go back to the HR intranet site, it's a server running an internet type application that is HR specific, if you want to call it that, that allows people across the organization to look at, I guess, specific information on the HR site. As a for instance, you could end up with environment also having an intranet site, but, I mean, those are only what I consider to be drops off Hydro's main network, I mean, the energy management system is really not related to the "intranet".
Q. I mean, you're diesel technician in Port Saunders has no reason to access the EMS, correct? So, that wouldn't be on an intranet type of site?
A. The diesel, well if the diesel technician has, if he's on the network in Port Saunders, and he has an end user device, then he can gain access to it.
Q. To any part of the Hydro system?
A. No.
Q. No.

Page 47

A. To only specific parts of the network that he's given permission to access.
Q. Yes, okay. So, your use of the word intranet basically encompasses the various sites such as the HR intranet that are generally accessible to everyone on your wide area network, is that correct?
A. Could you repeat that?
Q. Your definition of intranet is basically a series of sites such as your HR internet site, intranet site that people generally, on your wide area network can access?
A. The proper definition for an intranet is an internal internet.
Q. Yes, okay.
A. So if you have information put into a web enable type of application, then people with--internal to the organization can gain access to that information.
Q. Okay, but I mean, on that broad definition it basically includes your entire wide are network and your whole system, other than your website, which is outside?
A. No, it's only, it's only a small portion of the overall infrastructure.

Page 48

Q. Well yes, I mean, you have, you know, your VHF system and all sorts of other communications stuff outside of your wide area network, but effectively on the broadest definition of intranet, your wide area network is an intranet, it's an internal Newfoundland and Labrador Hydro system, is it not?
A. No.
Q. Why not?
A. Because basically the intranet is only one component that makes up the overall corporate infrastructure and is supported through the wide area network.
Q. So what's not on the intranet, as you define it?
A. Again basically the energy management system, all the data that's carried between the stations and the energy control centre is not on "corporate intranet".
Q. But if a diesel technician had access to that, he could, in Port Saunders, he could get it if he was authorized?
A. He can't, no. He can't gain access to the energy management system. Now, if you're looking for specific pieces of information on

Page 49

the energy management system, we do have an intranet site where we download certain information from the energy management system to the internet site to all people to gain access to that particular pieces of information. And again, it's on an as required basis.

Q. But if Mr. Haynes, for instance, found himself in Port Saunders some day and wanted to access the energy management system, could he do that?

MR. HAYNES:

A. I could only access the specific information that's fed to--I cannot get access to the energy management system per se. I can get access to the information, selected information that is fed out to the system. I can do a query as to when, you know, a 24-hour history of a certain generating station or a terminal station, but that's not in the EMS, that's data that's published by EMS through this--I don't know the name of the system, but it's outside EMS. The information is collected and there's a host of data put there to help engineers and operators and so on to

Page 50

go down through, and the diesel technician in Port Saunders could go into that particular site, if he has access, and say--because don't necessarily know when the last time the diesel ran because that may be turned on or off by ECC and he could find that out, or if it tripped, he could go in and look at the alarms that came up.

Q. Yes.

A. But he's not in the ENS per se.

Q. Okay. The project at B-79 talks about an upgraded communications network to support all applications and devices that have a standard protocol IP centre, I mean, is that essentially where you're going with your IT structure?

A. That's what we are proposing and that's where industry is going.

Q. And essentially all of your data transmission, including energy management system data is intended to utilize that sort of protocol, is that correct?

A. The new release of energy management system can support IP protocol.

Q. So ultimately the only restriction really is

Page 51

the restriction that you choose to impose in terms of who can access particular data within the system, is that correct?

A. No.

Q. Why is that not correct?

A. Because you're oversimplifying a very complex situation, basically data from--data for energy management system has certain latency restrictions that you cannot tolerate or that you can tolerate in a voice system, you cannot tolerate in an energy management infrastructure. Also the SCADA data has a higher priority than voice or any other type of data, so those are all considerations that you have to look at when you design an infrastructure.

Q. I want to move on to IC-35 which talks about the incident reports that were generated in connection with the system described by B-79. These are the reports from 2002 and 2003. On page 237 these documents note that there's an alarm and the issue resolution here apparently indicates that the outage occurred when the microwave system between SBH and GBPH failed. Do you see that?

Page 52

A. Yes.

Q. So this really had nothing to do with the GDC system, did it?

A. No.

Q. No.

A. And basically I talked to the team lead in the network centre and I brought that to his attention and he indicated that when the ticket was cut, he thought it was a problem with the GDC equipment and what happens at sometimes is not reclassified after it's closed.

Q. So that one should be subtracted from the total you've given us for the instant reports involving the system itself?

A. Yes.

Q. Okay. Page 3 seems to be something to do with the GDC node and what puzzled me a little bit on this one is the notation there for time worked which was zero hours and zero minutes. Can you explain how the problem gets fixed if nobody does anything?

A. Well basically we are, for some of these there were just no recorded time against, it doesn't mean that it fixed itself in no time.

Page 53

Q. Okay. The--at page 4, the issue resolution reads "no problem found". Does that constitute a failure on the part of the GDC system?
A. Well the fact that there was no problem found does not mean that there was no problem, so will remain as an active ticket.
Q. We basically don't know whether this was something to do with GDC or something to do with some other part of the system, is that correct?
A. Basically we don't know if it's a GDC problem or not, so we basically leave it as an active GDC problem.
Q. Okay, but on page 79 you've classified it as a GDC problem?
A. Yeah.
Q. Page 5 and I'm not going to go through all of these, you have--the issue resolution says "performed system optimization and service was restored". What's a system optimization?
A. I'd like to defer that to Mr. Dunphy.
MR. DUNPHY:
A. System optimization refers to a manual intervention that's required on the part of

Page 54

the operator. It indicates that the system did not perform as expected in terms of failing automatically to its backup, I believe, just from glancing through the description there. So a system optimization was performed. I suspect once the--no, the system optimization was performed in an attempt to force the system to use its backup circuits, which it should have done automatically.
Q. Okay. But essentially there's no explanation for why the problem occurred initially.
A. I believe the initial problem stated it failed due to microwave problems. Not having our system map in front of me, I can only quote from memory, but I believe what should have happened is that it should have used a backup route, which it did not do at the time.
Q. Okay. So the root cause here was the microwave and not the GDC?
A. No. The GDC did not perform correctly insofar as -
Q. No, I understand that, but -
A. But the root cause of the failure was a microwave problem; however, the GDC did not

Page 55

perform correctly.
Q. Okay. Just look quickly at page 7 of 37, that seems to be a problem with Newtel and that was GDC? The problem found to be with Newtel peers?
A. That appears to be correct, yes.
Q. Yes, okay. Can you just look briefly at page 9 of 37. From my reading of this, it just seems to record the fact that a piece of cable was moved from once place to another. I mean, was just actually a problem?
(10:15 a.m.)
MR. DOWNTON:
A. Well I guess the way an incident is classified is any disruption in service, so basically it means that something has got to be changed to put something back in service and that's the classical definition that we use for our incident management process. So I guess your question is was this a GDC problem? And the answer is no, not in that respect, it just indicates that an incident was identified where cabling had to be removed.
Q. And equally on pages 10 and 11 there's no fault found, apparently, and these were

Page 56

something to do with Aliant.
MR. DUNPHY:
A. Excuse me, if I could address that. The issue resolution states "circuit checked out fine". That indicates that it was suspected that the cause was Aliant, however, that turned out to be not the case. In this case, again, it's an intermittent fault or I would presume it would be an intermittent fault for which no actual problem was detected.
Q. An intermittent fault on what system?
A. On the GDC equipment.
Q. Okay. The work history that refers to an Aliant ticket?
A. Yes, so Aliant was contacted and requested to check the circuit.
Q. And all we know is that there was no dial backup on the circuit?
A. Well that's an observation. What we know is that the circuit failed and we were unable to determine the cause.
Q. Okay. But overall, looking to page B-79, is it fair to say that not all of the incidents reported in this table at the bottom relate to failures of GDC?

Page 57

MR. DOWNTON:
A. I guess based on my addition, we've subtracted possibly three off, for sure.
Q. I haven't gone through the 37, but my question was solely directed toward not all these 19 and 16 are in fact failures of the GDC?
A. No.
Q. Okay. I think we can move now to a few general questions on the subject of the VHF radio system and we'll continue with those after the break. Perhaps the best thing is for me to try and get a couple of factual clarifications initially in respect of the presentation that was made at the beginning of the evidence. Mr. Downton, you noted in the course of your evidence that the project proposed involved no new sites for repeaters?
A. Yes.
Q. Okay, what of the Granite Canal site, was there a tower there previously to -
A. The tower exists at Granite Canal.
Q. Okay, and whose tower is that?
A. That's Hydro's tower.
Q. Okay, and when was that put there?
A. That was put there probably about a year ago

Page 58

as part of the Granite Canal project.
Q. So there is a site that wasn't on the system before, but it was done as part of another capital project?
A. I guess the inference when I say that is part of the Capital Budget proposal, no new additional sites will be built within those costs.
Q. So to move then to the VHF system generally, can you explain to me your understanding of the difference between what your reports refer to as a conventional system and a trunking system?
A. Well if you wouldn't mind, I'll defer that to Mr. Dunphy.
Q. Okay.
MR. DUNPHY:
A. The primary difference between a conventional radio system and a trunked radio system is the utilization of channels at the repeater sites.
Q. Okay.
A. A trunked radio system typically utilizes channels at the repeater in a more effective manner when multiple channels are involved.
Q. So does a conventional system necessarily

Page 59

imply a single channel at a repeater site?
A. No.
Q. No. So you may have multiple channels at a given repeater site and yet you would not describe it as a trunked system?
A. No.
Q. So the trunked--is it fair to say that it's a trunked system depending upon how it is in fact used? You can have the same hardware and either use it as a conventional system or not use it as a conventional system?
A. I believe that is true in some instances, however, generally speaking I believe systems are either conventional or trunk in terms of their overall design.
Q. Okay. Can you just briefly describe how a conventional system operates in terms of where the signals go and how they're dealt with, leaving out any notion of trunking?
A. If I understand your question correctly, you're referring to a call between a mobile and a base station or -
Q. Uh-hm.
A. Depending on the distance, a call would originate, if we assume it originates at a

Page 60

mobile and the call is directed to a remote location, it would go through a repeater, possibly through a connection to a central switch, possibly to another connection, again to another repeater and to the destination.
Q. Okay.
A. There are various different scenarios, but in general, most calls on a mobile radio system go through a repeater.
Q. Okay. And the fact that the call may go through one repeater through a central switch and through another repeater has no implications for whether or not this is a trunking system?
A. No, absolutely not.
Q. Okay, so it is fair to say that under the conventional system, only one call could be processed at one time?
A. Yes.
Q. Okay. Is that different than the trunking system?
A. In a trunking system, again, depending on the number of channels available at a particular site, multiple calls can be processed simultaneously, yes.

Page 61

Q. Okay. So in terms of Hydro's existing system, how many channels are available at the repeater sites?
A. We have one channel available at each repeater site.
Q. There is only one channel at each site?
A. Yes.
Q. Okay.
MR. DOWNTON:
A. However, in the proposed system, we are looking for additional capacity in certain areas where we have access issues, not in particular, in the consultant's report notes the Great Northern Peninsula in particular.
Q. No, I understand. In terms of the existing system is the implication of your answer that each repeater can only handle one call at one time?
A. Yes.
Q. In answer to Mr. Alteen's questions earlier, your system was described as a hybrid, as between a trunked and a conventional system. What makes it a hybrid?
A. In my opinion what makes it a hybrid is that some of the features that are found in the

Page 62

system are typically found in trunked systems and not in some conventional systems.
Q. Okay, and what features are you referring to?
A. One that comes to mind is a certain amount of remote repeater management, such that from a central location you can determine status of repeaters and do some monitoring and testing on repeaters. Another would be--I'm just trying to give this some thought now--there are several, I know, that we've discussed in our document, none come to mind right now, I have to apologize.
Q. Okay. And of this monitoring and testing and so on, that doesn't require any more than one channel, obviously?
A. No, that has nothing to do with the number of radio channels.
Q. I mean, presumably this is a communication's function though, I mean from the switch to the repeater in order to determine its status?
A. Yes.
Q. Okay, all right. Now just so--I'm going to try to understand how the current system operates, you have, for instance, a repeater site at Codroy Pond, right down in the

Page 63

southwest coast. When a call is made from a mobile in that area which goes to that repeater site, how does that signal get from there to the switch in Gander?
A. On each one of our repeater sites there is a dedicated leased facility and leased analog facility.
Q. Uh-hm.
A. I'm sorry, the leased facility goes from Codroy Pond to Gander. It's a facility leased from the common carrier.
Q. Okay, so that's a microwave I presume?
A. It could be in the case of--well, I don't know exactly, it starts off as copper and it ends as copper and how it gets there in between, I have no idea.
Q. Okay.
A. In fact, it probably changes from time to time.
Q. So it could be a telephone line.
A. Yes, it could be a telephone line, and again, a telephone line could be microwave, it could be fibre optic, it could be a variety of technologies.
Q. Okay. I'd like you to turn for a moment, if

Page 64

you would, to Appendix C to the Business Case which is at Tab 4 of Section G. And this is the Custom System Electronic's Report.
A. Yes.
Q. I'm sorry, Mr. Dunphy, I think it's about the break time, Mr. Chair, so it might be as well to take it now, rather than get into this line.
CHAIRMAN:
Q. Okay, let's do that and we'll come back in fifteen minutes.
MR. KENNEDY:
Q. Mr. Chair, I'm sorry, the undertaking No. 17, that's actually Undertaking No. 19. I'm sure this time.
A. Number 6 is No. 8.
Q. No, No. 6 is still No. 6.
CHAIRMAN:
Q. So it's No. 19.
MR. KENNEDY:
Q. That's correct. Okay, thank you Mr. Kennedy.
MR. KENNEDY:
Q. Thank you, Chair.
(RECESS AT 10:28 A.M.)
(RESUME AT 10:49 a.m.)

Page 65

CHAIRMAN:
Q. Okay, Mr. Hutchings.
HUTCHINGS, Q.C.:
Q. Thank you, Mr. Chair. Mr. Dunphy, I was about to refer you to Appendix C. I think what's on the screen now is an attachment to that, but what I'm looking at is page 13 of the report itself. It's the same document, Mr. O'Reilly, page 13 of the--not the business case, but the Appendix C to the business case, the technical report. Yes, that's it. Page 13, gone past it. There. At the bottom of that page, in paragraph 6.3.1, their consultant says "review of the existing NLH multi-department mobile radio system description indicates that it is a trunking system, with the exception that a single repeater is employed at each site. Although this defeats the concept of trunking, the system has the necessary features to operate with a central switch and to perform the necessary telephone interface functions which are available on all trunk systems being considered as alternatives." Can you explain why the description would indicate that the existing one is a trunking system?

Page 66

MR. DUNPHY:
A. I can speculate why. There is a statement in our system description document which states that the system uses shared resources at repeater sites. However, my interpretation of that statement is not that it is a true trunking system, but rather that it utilizes the resources in, what's called in the industry, a round robin fashion.
Q. Okay. And what do you mean by a round robin fashion?
A. Round robin refers to resources, multiple resources that are utilized in sequence rather than first in line always being used.
Q. Okay.
A. Again, that is pure speculation on my part.
Q. When you refer to multiple resources, what do you mean?
A. If there were multiple channels at a single site, they would be used in sequence, I believe. That is my interpretation of the statement.
Q. Okay. Are there or are there not multiple channels at your existing sites?
A. No, there are not.

Page 67

Q. There are no sites that have multiple channels?
A. Not at this time, no.
Q. Okay. And if I understand the description of the current system correctly, the existing switch at Gander is not a redundant switch?
A. No, it is not.
Q. Okay. Can you just explain for us, for the record, what the redundant switch is?
A. Redundancy typically means that critical components are duplicated in such a fashion that should one fail, there's a back up component that can take over the operation of the system.
Q. Okay. And your consultant's report, the technical report that we're looking at, recommended that there be a switch at Gander that would be redundant? Is that correct?
A. Yes.
Q. Okay.
A. I believe that is correct.
Q. All right. Now I think we have perhaps a reasonable description now of the existing system as it sits. Can you just explain for me essentially what you're going to look for

Page 68

to replace that system? Assuming that the Board were to approve this proposal and you were to call for proposals to replace your VHF system, what would you go look for?
A. We would look for a system that is capable of meeting our current and future needs, that has the type of reliability that we wish to maintain in our communications infrastructure, and that meets all of the functions of the existing system, and will be able to be expanded to meet any future needs and any future applications.
Q. Okay. I was thinking more along the lines of what you would put in a call for tenders to have suppliers respond to you and say "we can offer you this system."
A. I gave you an overview of what we anticipate. A detailed specification has not been developed at this stage and would not be developed until detailed engineering was done. So I'm incapable of listing specifically what would be in a call for tenders.
Q. No, but presumably you will ask for a VHF radio system?
A. Yes.

Page 69

Q. Okay, so we know that much at least?
A. Yes.
Q. It's not going to be UHF; it's not going to be cell or satellite or anything else?
A. No.
Q. It's going to be VHF?
A. We've established that VHF is the most beneficial frequency band.
Q. Okay. Will the specification indicate whether or not the system should have a central switch?
A. I believe it's premature to state that. We've looked at some alternatives. We've established that there's a very good alternative out there that does not require a central switch. However, we've also stated that we intend to develop a functional specification.
Q. Okay. So I think we're getting closer now. So the specification will be functional one, rather than an equipment specific one?
A. Yes.
Q. Okay. So if I'm relating that properly to where we are now, your specification could allow for the type of system that your

Page 70

consultant recommended to be offered to you or it could allow this alternative architecture that you've discussed to be offered to you?
A. Yes. I believe Mr. Downton already stated words to that effect on Monday.
Q. Okay. Now in your discussion with Mr. Alteen about the alternative architecture that you mentioned, and I'm referring to the transcript of July the 7th at page 114.
CHAIRMAN:
Q. Page number again, Mr. Hutchings, please?
HUTCHINGS, Q.C.:
Q. 114, Mr. Chair. It's there on the screen. At the top of that page, and this was your answer, according to the transcript, "I should add to that, I guess, when Custom Systems did the technology review in 2001, the Passport product, if we can call it that, did not--was not on the horizon as such, and I guess it's only through additional research over the last two years in particular that basically the Passport product has come forward as a viable technology alternative." You go on then later on, or further down the page, you're asked whether it was not commercially available, and

Page 71

you didn't agree with that. You said "I do not believe it was not available. I would say the consultant was not aware of it." Do you know when this Passport system came on the market?
A. No, I do not.
Q. Okay. I've been trying to find out a little bit about it. I've seen references on websites to it as early as 1997. Were you aware that it had been talked about back that early?
A. I became aware of Passport in 2001.
Q. Okay. And was that after this technical report was done?
A. Yes.
Q. Okay. And how did you become aware of Passport?
A. I believe initially it was brought to our attention by a supplier.
Q. Okay. And can you tell us what Passport is?
A. Passport refers to, in my understanding of it, Passport refers to a trunked radio protocol.
Q. So it would essentially consist then of software and maybe some hardware?
A. The protocol itself exists as a definition,

Page 72

but a Passport compliant system would be a system that would consist of software and hardware.
Q. Yes, okay. So Passport is a trade name, correct?
A. Yes.
Q. Yes, okay. So in order to implement this Passport protocol, you would still have to go out and buy repeaters?
A. Yes.
Q. Okay. And the Passport protocol, as I understand it, would not require that you have a central switch?
A. No, it would not.
Q. Okay. Could the Passport protocol be used with a central switch?
A. I am not aware that it can.
Q. You don't know whether or not it can?
A. No, I don't know whether or not.
Q. Okay. What is the purpose of the Passport protocol?
A. I beg your pardon?
Q. What's the purpose of the Passport protocol? What's it supposed to do for you?
A. The purpose of a protocol in general is to

Page 73

permit communications between devices.
Q. It's a networking tool basically, is it?
A. Yes, I guess, in one context it is.
Q. Okay. I thought I understood from your answers to Mr. Alteen that you never did have any discussions with your consultant, Custom Systems Electronics, about Passport, did you?
A. Not at the time of his report. We've since had conversations. He is now--I know he is now aware that Passport exists.
Q. Okay. And so far as you were aware, he was not, prior to the filing of his report with you, aware of Passport?
A. I cannot speak for the gentleman, but as far as I am aware, no, he was not.
Q. Okay. Did you ask him to evaluate Passport or give you an opinion on Passport?
A. Not at this point, no, we have not.
Q. Okay. Have you involved anyone outside of the Hydro organization in the analysis of the potentials of Passport?
A. We've spoken to other customers. We have spoken to the manufacturer. We've spoken to Motorola, who is the supplier, and we've spoken to distributors.

Page 74

MR. DOWNTON:
A. And Mr. Dunphy also did a site visit to an installed Passport system in the United States.
Q. Okay. And where was that?
MR. DUNPHY:
A. That was in southern California.
Q. When you say Motorola is the supplier, is Motorola the supplier of the protocol as well as the equipment?
A. Protocol, as I understand it, the protocol is owned by a third party who right now manufactures the site equipment so Motorola would be described as using the original manufacturer as an OEM, original equipment manufacturer, but supplying the equipment themselves.
Q. I'm sorry, you said Motorola would be supplying the equipment themselves?
A. Yes. The equipment will be supplied through Motorola.
Q. Okay. But it would come from the -
A. A third party manufacturer.
Q. - third party manufacturer. Is that Trident you're talking about?

Page 75

A. Yes.
Q. Okay. Trident, as I understand it, owns that protocol, the Passport protocol?
A. Yes, that's right.
(11:04 a.m.)
Q. Okay. Are you aware of what, if any, minimum requirements there are for the repeaters in order to allow them to use the Passport protocol?
A. We have been informed that standard analog single channel radio repeaters will support the Passport protocol, that it is transparent to the repeater.
Q. Okay. And that's what you have now, isn't it?
A. Yes.
Q. Okay. So you could use the Passport protocol on your existing system?
A. Yes. We could use it--I'm sorry, we could use it with our existing repeaters. We could not use it with our end user equipment, our mobile, portable and base station radios, nor could we use it with our central switch. But we could use the repeaters themselves, yes.
Q. Okay. And what is it about Passport that would prevent your using the end user devices?

Page 76

A. There is encoding and decoding of the specific features of the Passport protocol that take place in the end user device. The radios we have, the bulk of the radios that we have were manufacturer discontinued by Motorola, the end user equipment, many years ago, and do not support Passport encryption or decryption.
Q. Okay. Is the encryption and decryption a necessary part of the Passport protocol?
A. Absolutely is. From what I have been told, yes, it is. The features will not function without it.
Q. Okay. Is there an issue about the performance of Passport, dependent upon how many channels are on your repeaters?
A. I'm not aware of any.
Q. Okay. So far as you're concerned, a single channel repeater is perfectly fine?
A. Yes.
Q. You don't get any benefit -
A. So we've been informed.
Q. You don't get any benefit out of having a multichannel repeater?
A. You do get benefits in terms of increased traffic, as you would with any trunked radio

Page 77

system.
Q. Okay. But that's not specifically tied into Passport as such?
A. No.
Q. No, okay. Now can you explain to us how the Passport system routes calls?
A. How it routes calls?
Q. Yes.
A. I would certainly have to give it some thought. I'm not intimately familiar with the details of the protocol.
Q. No, I mean, the system that you have is somewhat understandable, I guess, to the layman in the sense that you make a call, it goes to a switch and the switch tells the call where to go and so on.
A. Yes.
Q. But what you're talking about, as I understand it, with Passport, is a system that will not have a central switch?
A. No, that's right.
Q. So what's going to do the routing?
A. If I recall correctly, it is analogous to a computer network whereby once the call is initiated and a destination is established,

Page 78

the components of the network will seek the best route for traffic to get from one end to the other.
Q. Okay. So presumably that involves some additional software at the repeater? Is that correct?
A. Presumably it involves software at the repeater, yes. There is intelligence and decision making at the repeater.
Q. Yes, okay. Looking at the proposed system as it is represented on page 27 of the Telecommunications Plan, each of the indications here, the red ovals and the black boxes, represent a repeater as I understand?
A. Yes.
Q. Can you just explain for us how a call would make its way from St. Anthony to the ECC using the Passport protocol?
A. That would depend entirely on the configuration of the system. The final configuration, the final design has not been done to that detail. In general terms, it would probably progress through the repeaters on the Northern Peninsula and thence into Hydro's microwave network, but in specific

Page 79

terms, that's impossible to do at this stage.
Q. Okay. So would there be a connection of some sort between the St. Anthony repeater and the Southwest Brook repeater?
A. There may and there may not, it depends entirely on the final design of the system. One would look at traffic patterns. One would look at historical usage. One would look at the most cost effective way to do that.
Q. Okay. Would each repeater site have an individual access to the public switch network?
A. No, not necessarily.
Q. Okay. But some of them might, or are all of them -
A. Some of them might, and it would be prudent to have some of them with connections to the public switch telephone network because that is a component of the existing system that is utilized.
Q. Okay. I'm just trying to explore this notion of single point of failure, which you say this architecture is designed to avoid, and I think we can understand that if the Gander switch goes down in the current system, you basically

Page 80

don't have a system. Is that correct?
A. Yes, that is true.
Q. Okay. In terms of how the new architecture would work, presumably a call from St. Anthony will either go through Blue Mountain or Southwest Brook on its way to Mount Margaret and down into some other part of the system. Is that fair?
A. That is possible. That is one scenario, yes.
Q. Okay. So if the system provides for that call to go through Southwest Brook to Mount Margaret and Southwest Brook is down, then you can't get a call from St. Anthony?
A. Again, not necessarily. One could have multiple connections into St. Anthony using multiple facilities, for example. However, in terms of the design of the system, I do not believe it is cost effective to have multiple points of access to every single location. So it is conceivable that one site, and St. Anthony being a prime example, may not have multiple points of access.
Q. Yes, okay.
MR. DOWNTON:
A. I guess in a simplistic fashion, the way that

Page 81

the stations or the sites will be interconnected is like in a ring. So basically each site connects on through in a ring-type fashion and the analogy of if you lose a site, then depending on where you are on that side of the ring, the traffic can go this way or the traffic can go back that way, and I think that's basically what Mr. Dunphy is trying to allude to, but in essence, it may not look exactly like just a single ring. It may be a series of rings, depending on what the traffic analysis and the detailed design bring out.

Q. Okay. Are you familiar with the term "mesh architecture?"

MR. DUNPHY:

A. Yes.

Q. Okay. And can you explain to us what that is?

A. Mesh architecture, in my understanding, generally refers to multiple contact points to multiple locations.

Q. Okay. And does that concept form any part of your proposal now?

A. A mesh architecture, a mesh topology is generally more complex than a ring topology.

Page 82

Conceptually, it may make sense to implement a mesh between certain points in the network, but again, that will depend on detail design.

Q. Would it not be correct that the number of connections to a particular site will have an impact on the cost of putting all this in place?

A. In certain locations, yes, it will.

Q. But to this point, you haven't determined which, if any of these thirty-five sites, will need a multiple connection?

A. We haven't gotten to that level of design, no.

Q. So you don't know how much the system is going to cost?

A. We have an estimate of how much the system is going to cost.

MR. DOWNTON:

A. We've put forward, within the operating costs, we've put forward digital facilities into each one of those sites. I guess whether we have one, we'll call, voice circuit in there or for one channel or whether we have two, that level of detail has not been done. It would not be done until you get into the detailed design because the traffic analysis will impact how

Page 83

the infrastructure will look and also will impact on what the infrastructure will cost. So that's part of the detailed design, so you want to minimize both your capital and operating costs in the design phase.

Q. Yes, I was less concerned with the number of voice circuits, I guess, to a particular location, as to the question of, in the case of St. Anthony, for instance, will there be a connection both to Blue Mountain and to Southwest Brook and/or the public switch telephone network, and whether there's one, two, three or four of those is going to represent an additional cost, is it not?

MR. DUNPHY:

A. Absolutely, yes.

Q. Yes.

A. That level of detail has not been explored.

Q. Do you have any notion of the magnitude of the costs that might be involved with one, two, three or four connections from a particular site?

A. You mean -

MR. DOWNTON:

A. In the operating costs, we've put forward the

Page 84

digital facilities into these sites and with digital facilities, as being the worst case option, as you increase the number of channels, the actual per unit cost decreases. But we have not got into we need two into St. Anthony or we need three into St. Anthony, because that's, from our perspective, we've assumed what we consider to be a worst case scenario, as far as the design of the facilities into each one of these sites, and that we are looking at fractional T1 facilities into these sites, which will give us maximum flexibility. When we get into the detailed design, we may not find that we need to go with fractional T1 facilities and that will indeed reduce our costs.

Q. So your present plan has digital equipment at every single one of these thirty-five sites?

MR. DUNPHY:

A. Yes.

Q. And that would allow for how many points of exchange?

A. It could allow for up to twenty-four. We don't anticipate that we need those sorts of numbers. The preliminary estimates that we've

Page 85

obtained assume one, two or three to most locations.
Q. So you're building to accommodate twenty-four, but -
A. No, no, no.
Q. - you feel that you could really only need three?
A. No, that is not true. The equipment that is used is referred to in the industry as T1. It's capable of twenty-four voice channels.
Q. Yes.
A. So when the supplier installs one of these shells, it is capable of twenty-four channels. If we use one channel, we pay for one channel. If we use for two, we pay for two. As we use more, generally speaking, in the pricing structure, the price goes down.
Q. Yes, I understand that once you have your digital equipment in there, but what's the alternative to the digital equipment?
A. For this particular system, there is no alternative to digital equipment.
Q. And why is that?
A. The Passport equipment requires a digital connection between sites.

Page 86

Q. So if you decide to go Passport, you have to go digital?
A. Yes. That's not to say we can't use a less expensive type of digital technology, for instance, voice over IP, but it would be a digital connection.
Q. And what's the price differential between the analog and the digital system?
A. I'm not exactly sure right now. If you refer to the cost benefit that was done in the business case, there were some preliminary estimates for analog facilities for a conventional system versus digital facilities for a trunked system. So if we scroll to Appendix A4, Mr. O'Reilly.
Q. Is that Attachment A4?
A. No, Appendix A4 of the business case, A.4.
MR. DOWNTON:
A. Appendix A, sheet 4.
MR. DUNPHY:
A. Appendix A. So herein, we have what we consider to be worst case costs for trunked versus conventional and you can see that, based on the assumptions that were used in here, the trunk facilities were shown to be

Page 87

more expensive on an annual operating basis.
Q. And then annual operating basis, you mean your O & M costs?
(11:19 a.m.)
A. Yes, the O & M costs that are shown here, basically, leased facility costs and I believe it also includes an allocation for accommodation in leased sites.
Q. Yes, okay. We do need to get into that, but you're suggesting then that the conventional radio system that you're presenting here is an analog system?
A. It would use--the assumption made is that it would use analog facilities between locations.
Q. Okay. Is your answer here directed at the notion that there is not a significant difference in costs between the analog and digital systems?
A. No, my answer here is that under the column O & M costs, we can see that for the assumed configuration here, the digital facilities are slightly more expensive, are somewhat more expensive than the analog facilities.
Q. Yes, okay. From a capital point of view, you're showing a higher cost for the

Page 88

conventional radio system?
A. Yes.
Q. Okay. I want to get back to those operating costs later, but the question for this time is what is the analog alternative to the Passport system? I mean, if you did not go with the Passport system, which would necessarily require that you go digital -
A. Yes.
Q. - what is the analog alternative? Is there a trunked radio analog alternative?
A. I'm not entirely certain. I know there are several other trunked radio systems out there and whether they use analog or digital facilities, I can't say.
Q. Have you looked at any other system that does not use a central switch, other than Passport?
A. No, I'm not aware of any other.
Q. You're not aware of any?
A. No.
Q. Have you ever heard of the radio access control system produced by Zetron?
A. Yes, I have. We have--we consulted with Zetron and actually met with one of their customers.

Page 89

CHAIRMAN:
Q. Mr. Hutchings, could you spell Zetron for the purpose of the record?
HUTCHINGS, Q.C.:
Q. Yes, sir. It's Z-E-T-R-O-N. And what was the purpose of your meeting with Zetron?
A. It was to determine if they had a product that met our needs.
Q. Did you make a determination about that?
A. Yes, when we met with Zetron and their customer, it was felt that the Zetron racks was not sufficient for our requirements.
Q. In what particulars?
A. I would have to refer back to the conversations we had and the notes we kept and talked to the other team members, but it was eliminated as a viable alternative at the time.
Q. Can you find out for me why that was eliminated as a viable alternative? (UNDERTAKING)
A. Yes.
Q. Okay, thank you. Have you explored the possibility of using your existing switches with Passport protocol, your existing

Page 90

repeaters, I'm sorry?
A. Yes, we did.
Q. And what conclusion, if any, did you reach?
A. The conclusion we reached is that, which is demonstrated in the Supplementary Evidence that we filed last week, we did not feel it is cost effective to try and extend the life of the existing repeaters, which I assume is what you're referring to.
Q. No, I didn't -
MR. DOWNTON:
A. However, the Passport product can support the existing repeaters, and that's what was shown in the Schedule 1, page 1 of 2.
Q. Okay. Well, let me understand what Schedule 1 is intended to show then.
MR. DUNPHY:
A. What Schedule 1 is intended to show is that cost estimate for delaying the replacement of the repeaters, what our engineering staff did was look at the original budget, subtract a portion for repeater replacement and allocate that over three years.
Q. Okay.
A. 2007, 2008 and 2009, I believe.

Page 91

Q. Okay, but is this Schedule 1 based upon the implementation of the Passport protocol?
A. This Schedule 1 is based upon the Capital Budget that we submitted.
Q. Which is not based upon the Passport protocol, correct?
A. I beg your pardon?
Q. Is the Capital Budget item that you've submitted now based upon utilization of the Passport protocol?
A. Yes.
Q. Does it say that anywhere?
A. No, it does not.
Q. So the business case doesn't refer to the Passport protocol?
A. No, it does not.
Q. And your consultant didn't--apparently didn't know about it at the time he did his report?
A. Apparently didn't, no.
Q. Okay. In B71, this item in the project description, in the third line, says that the replacement existing systems involves replacing equipment at twenty-nine repeater sites, as well as the replacement of the central switch located in Gander.

Page 92

A. Yes.
Q. I understood you to tell me that the Passport system did not involve a central switch.
MR. DOWNTON:
A. Basically, the words that it's saying is that the switch will be replaced. It does not necessarily mean that the switch will be replaced with a switch. We will replace it with whatever architecture is appropriate at the time of tender. So whether we replace it with a switch or replace it with a distributor architecture, that degree would not be defined until such time you evaluate your tenders.
Q. Okay. Just so I'm clear, I really do want to understand what you're saying, Mr. Downton. So when you use the words here, replacement of a central switch, you mean taking out the central switch and not putting one back?
A. That could possibly be, depending on what the vendor proposals come back with.
Q. No, what I'm asking is what you meant when these words were put in.
A. When those words were put in, the intent was that we have an existing system whereby the switch is obsolete and we have to replace that

Page 93

switch with an infrastructure that provides the same functionality.
Q. Your project description, in the justification, refers to the business case analysis, correct?
MR. DUNPHY:
A. Yes.
Q. Okay. And the business case analysis, at page 3, under Item 2.4, with the scope and major deliverables, includes, in the first bullet, "a trunked MRS infrastructure, including, but not limited to, standards based switching equipment, site controller equipment and system management hardware and software."
A. Yes.
Q. So you're saying that the project described in B71 isn't intended to provide for a central switch, but the business case that you say supports it, talks about one of the major deliverables being switching equipment?
A. Yes, switching equipment could consist of a central switch or equally the distributed architecture could be considered switching equipment. It performs the same function.
Q. Is there a reason why B71 or B72, the two

Page 94

pages that are there, doesn't refer to the fact that there's not going to be or may not well be a central switch?
MR. DOWNTON:
A. Not for any particular reason. I guess, it's just that the proposal was to replace the existing system, and it will be replaced with whatever technology will meet the functional requirements, and I guess, as part of the costing since 2001, we did look at another product called Passport product, and I guess, what I'd--and in that regard, as much as we talk about the consultant's report, I'd like to refer you to Appendix C of the business case and the page 28, and Section 11.3.1., and I guess it's--I'll wait for Mr. O'Reilly to get there. The heading is "mobile system recommendations" and under Section 11.3.1 and in bold, I guess, it's in bold in mine, what the consultant said "while this report offers the best estimates at this stage, the writer is aware of planning and corporate affiliations which could cause a change in technology and costs overnight, which is consistent with rapid growth and aggressive

Page 95

competition in the trunk radio market." And I guess all the consultant is indicating here that the technologies in the trunk radio market are ever changing and what technologies existed at the time of writing may indeed not exist at such time when we go out for tender, and these are unfortunately the fact of life dealing with the technology areas, and with regards to replacing the system, again, we are proposing that the system be replaced and what the exact technology will look like in 2004 will be best evaluated at the time of evaluation of the tender responses. But when we get our pricing to put forward a cost estimate, we had to base it on something, and we felt that, at that point in time, the Passport product, based on our analysis, offered a functionality which met our requirements and also met our present and future requirements as well, and offered us a very viable alternative.
Q. At the time that the technical report was prepared, you asked your consultant to come up with cost estimates, and he did, in Attachment 5, correct?

Page 96

A. Yes.
Q. Okay. Now these are not the cost estimates on which you're relying at the present time? Is that correct?
A. That is correct. We basically still looked at those cost estimates and basically did a refresh on those, and I guess, what we did, we looked at a cost estimate for another technology that he had not identified.
Q. That was the Passport technology?
A. Yes.
Q. Okay. So where is the breakdown for the cost with respect to the Passport technology in a form similar to that in Attachment 5?
A. Do you want to speak to that, Gerard?
MR. DUNPHY:
A. We haven't submitted that.
Q. Do you have it available?
A. It has been done, yes.
Q. I'd like an undertaking that it be produced.
(UNDERTAKING) I take it that pricing was all done in-house, was it?
A. Yes.
(11:34 a.m.)
Q. There was not an outside consultant involved

Page 97

in doing that pricing?
A. It was done in consultation with our supplier.
Q. Yes, okay. So you say 'your supplier'. I take it that is one potential supplier you're speaking of?
A. Yes.
Q. Okay. Do you know how many suppliers are in the market that could respond to a proposal along the lines of the one you're thinking about?
A. No, I do not.
Q. Okay. Do you know if there is more than one?
A. No, I do not.
Q. Okay. So whatever system you do go for, at the present time, you're still just looking at a single channel per repeater site? Is that correct?
A. In our preliminary estimates, we have assumed that there will be, if I recall correctly, there will be multiple channels at certain sites on the Northern Peninsula.
Q. Okay. I take it that your desire to have multiple channels at particular sites on the Northern Peninsula could be met by simply replacing the repeaters on the Northern

Page 98

Peninsula?
MR. DOWNTON:
A. No.
MR. DUNPHY:
A. Are you referring to the current system?
Q. The current system, yes.
A. No. Mr. Downton?
MR. DOWNTON:
A. I basically said no.
Q. Yes, I asked you why not.
A. Why not, because the repeaters have to be interfaced to a site controller manufactured by ATI and there's no--those parts are no longer available and the software in the central switch would also have to be upgraded to accommodate an additional repeater and that basically capability is not there. So the system, as it exists right now, cannot be expanded due to no manufacturer support.
Q. And that's the problem with the central switch anyway, isn't it?
A. Well, when we talk about central switch, the central switch typically comes with an intelligent site controller. So what we're saying is that both of those technology issues

Page 99

preclude us from being able to expand the system.
Q. But if you replace the central switch, then you could accommodate multiple channels on the Northern Peninsula, could you not?
A. If we replace the central switch and the site controllers -
Q. Yes.
A. - then you could do that, assuming that the technology that you put in can also support the existing radios, which, based on our information, cannot. So what it basically means is that central switch site controllers and end user radios have to be replaced.
Q. That's not what I understood was the answer given to Mr. Alteen in his questioning the other day. I'm looking for the reference in the transcript, but I was left with the clear impression that you could replace the central switch and continue on with the existing system. Are you telling me now that that's not the case?
A. I didn't--what I basically--in speaking to the Passport product, basically, and Mr. Dunphy reiterated that, with implementation of the

Page 100

Passport product, it will not support the end user devices.
Q. No, I understand that.
A. I guess whether another technology could support the existing fifteen-year-old radios, that would have to be determined.
Q. I understood that the repeaters, if they were found to be a problem, could be replaced from a different vendor and you would still have a compatible system?
A. If we lost a repeater now, basically if we had to replace a repeater at St. Anthony hilltop, we could buy another repeater from Motorola and interface it to the existing site controller, yes.
Q. Okay. And it would work with your existing end user devices?
A. Yes.
Q. Yes, okay. So aside from Passport and the racks system of Zetron, have you looked at any other alternatives?
MR. DUNPHY:
A. In 2001, we contacted several manufacturers and distributers. We contacted Tait who supplies -

Page 101

Q. Tait, you say?
A. Tait, T-A-I-T, they supply an MPT 1327 system. We also spoke with Motorola with respect to their smart zone and Comnet Erricsson with respect to their EDACS. And I think as Mr. Downton has already pointed out, those were quickly eliminated because of the cost of the systems because they're public safety systems and higher cost as a result.
Q. So, these are the systems that are mentioned in the technical report?
A. Yes, those are two of the systems. We attempted to contact ER Johnson with respect to their LTR system and were unsuccessful. And I believe Mr. Cook pointed out that Tetra was only available in the UHF bands, so that was excluded for the reason.
Q. Did you approach anyone with another similar protocol to Passport other than the Racks people?
A. No, not aware of anyone with a similar protocol. As I said, we did approach EF Johnson about their LTR net which I understand is somewhat similar to Passport, but were unsuccessful in getting a response from them.

Page 102

Q. Okay. Now, just coming back to Schedule 1, page 1 of 2 of the supplementary evidence for a moment. The first note here says that the trunked radio system estimate based on figures used in the Capital Budget proposal and it says, same functionality as present system. If I'm understanding your answers correctly, the figures used--when you refer to figures used in the Capital Budget proposal, you're talking about a system using a Passport protocol, is that correct?
A. Well, the estimate was confirmed using Passport, so you could infer that, yes.
Q. Well, where did the estimate come from originally then?
A. Well, the original estimate, I would guess, in 2001 was the one we used from Mr. Cook's report. We subsequently confirmed that that was an acceptable estimate for a Passport system.
Q. Okay. The language you used in speaking to Mr. Alteen about that was that it was an order of magnitude estimate, is that correct?
A. Yes.
Q. What does order of magnitude mean to you?

Page 103

A. Well, in a strict mathematical sense, I believe it refers to a power of 10.
Q. Yes.
A. But in my interpretation it refers to an estimate that is reasonable within an acceptable percentage.
MR. DOWNTON:
A. An acceptable percentage we use for our Capital Budgets is plus or minus 10 percent.
Q. So, that's something different than the ordinary meaning of the words order of magnitude.
MR. DUNPHY:
A. The strict mathematical definition, yes.
Q. Okay.
MR. DOWNTON:
A. But when we prepare our Capital Budgets, we prepare it to that plus or minus 10 percent.
Q. The operation and maintenance cost shown on Schedule 1, page 1 of 2, said, are assumed to be fixed for a 15 year contract with a third party supplier. Am I correct in understanding that you have such a contract with Aliant at this point?
A. Basically no, there's no "contract" with

Page 104

Aliant on existing system.
Q. They do do the maintenance though on -
A. They do maintenance, but it's on time and materials basis only.
Q. Okay. And are these numbers, that you've shown for the $569.000.00 consistent with what you're paying Aliant now?
A. The cost that we pay Aliant now are broken down into two pieces, or a couple of pieces and those are actual trunking costs. Our facilities to connect repeaters and also site and accommodation charges and those are the two primary areas there because any actual maintenance costs would be common across the two sets of infrastructure from actual maintenance perspective, so. And Mr. Dunphy, you can correct me if I'm wrong, but my understanding of what's in O&M is the interfacilities trunking charges to connect these repeaters to a network and also what we call site and accommodation charges that we would typically pay Aliant to have our equipment at their site, is that correct?
MR. DUNPHY:
A. I believe in this estimate actually, when the

Page 105

individual did this, the common costs for accommodations were probably not included and was just concentrated on the facility costs.
Q. When you say common costs for accommodations, you mean, basically rental of space?
A. What's referred to as tower power and space.
Q. Okay. Now, just before you leave that answer, if you look at Schedule 2, page 1 of 2, the O&M costs for the alternative with 14 Hydro owned sites are given the same number as the O&M costs for the trunked radio system on Schedule 1.
A. Yes.
Q. Are you telling me that the Schedule 2 costs don't include the accommodation costs either?
A. Just looking at the number, I don't believe they do, no.
Q. Isn't that what Schedule 2 is supposed to be doing a comparison of?
A. Schedule 2, if you look at the O&M costs, the additional O&M costs reflects the additional leasing charges if we did not move to those 9 Hydro owned sites. So, it would include a component for the nine sites. It would include a component consisting of tower power

Page 106

and space and trunking facility charges.
Q. So, what you're telling me is on Schedule 2 under the 14 Hydro owned sites O&M costs, there are no tower power and space costs?
A. I believe that's correct, I'd have to confirm that, but I believe it's correct.
Q. And under five Hydro owned sites there are tower power and space costs for -
A. For the nine sites in addition to--for the nine sites which represent the difference between the 14 and 5.
Q. When you're trying to compare the cost of moving from one to another, is there a reason why you leave out those costs in one the -
A. I believe common costs can be left out and not affect the analysis.
Q. So, the five Hydro owned sites has tower power and space for nine sites.
A. Yes.
Q. And the 14 Hydro owned sites doesn't have tower power and space for any?
A. it doesn't have tower power and space for any, no.
Q. All right. Let's get back to where we were. On Schedule 1, the O&M costs then don't have

Page 107

tower power and space costs, so all that's in there is the trunking costs?
A. I believe that is true, yes.
Q. And it doesn't include your maintenance costs?
A. It doesn't include internal maintenance, no it doesn't include maintenance costs.
Q. Okay. I mean, the maintenance is done a time basis by Aliant, isn't it?
A. On the current system, yes.
Q. Okay. So, your note that says operations and maintenance costs are assumed to be fixed for a 15 year contract with a third party supplier. All that really is, is trunking costs are assumed to be fixed for a 15 year contract.
A. I believe so, yes.
Q. And operation and maintenance costs don't show up here at all?
A. If you are referring to maintenance of the system -
Q. Yes.
A. - then I believe that costs does not appear there. However, leasing costs certainly fall within the category of operations and maintenance.

Page 108

Q. Yes, okay.
(11:49 a.m.)
MR. DOWNTON:
A. But the maintenance costs would be common to both units as well, so really there are common costs.
MR. DUNPHY:
A. .3, I guess, states that maintenance costs are assumed to be identical.
Q. Okay. Under the heading, trunked radio system with repeater replacement after five years, where do you come up with the number of 2007, 2008 and 2009 for capital costs?
A. Our engineers did an estimate assuming that that was a separate project. So, they did an estimate for the normal things that they would estimate, the materials costs, the engineering and labour costs as well as the associated overheads.
Q. The total capital cost under the trunked radio system with repeater replacement over five years according to my calculations, 9.228 million?
A. That sounds correct.
Q. Whereas the capital costs on the left hand

Page 109

presentation are just 8.85 million?
A. Yes.
Q. Can you explain to me how it is that it costs an extra $400,000.00 to defer this expenditure to 2007?
A. Well, when the costs for the repeaters were deducted from the original capital cost estimate of 8.85 million, an allowance was taken out there for the reduction in engineering time and installation time. However, when they redid the calculations, it was recognized that there would be additional engineering, installation and travel times caused by multiple trips to the sites that would be required in order to install a new system in one year and then replace the repeaters in subsequent years.
Q. Well, if you don't replace the repeater in Corner Brook in 2004, then you don't have to go to Corner Brook, do you?
A. Oh, absolutely you do, if you're putting in a new site controller and even if you don't put in a new site controller, you will still be required to go there to check the equipment, to check the existing equipment and to do

Page 110

testing and commissioning.
Q. So, what you're doing is to visit all the sites anyway in 2004.
A. Yes.
Q. The 2005 capital cost doesn't change, what's included in that 5.8 million?
A. The 5.8 million would include the component of the contract, it would include installation, engineering. As well, I believe the way the system calculates these costs that the contingency and corporate overheads show up in the second year or a multi-year project. The reason that they don't change, well, without looking at the exact estimate, I can't really state the reason that they don't change.
MR. DOWNTON:
A. If you refer to B71, what we're talking about, the second year costs which is approximately 5.802 million, that basically covers all costs associated with that particular year including internal, contract and basically all corporate overheads, escalation and contingencies. So, basically what cash flow showed is a total all up cost of 8.85 million dollars over those two years in 2004/2005.

Page 111

Q. Essentially what you're suggesting to us is that the 23 repeaters to be replaced from 2006 to 2008 were all going to be done in 2004?
A. Terry, could you go back to the previous slide? Are you referring to this particular -
Q. Yes.
A. I guess what -
Q. My question to Mr. Dunphy originally was why the 5.8 million is the same in both scenarios.
MR. DUNPHY:
A. Yes.
Q. And the difference between the two scenarios is that there are 23 repeaters replaced between 2006 and 2008 in the first one.
A. Yes.
Q. And the only number in capital cost that changes in the second one is the 2004 number.
A. Yes. It would appear that the person who did the estimate made that assumption.
Q. In respect of the tower power and space charges that are in effect now from Aliant, what's the approximate amount of those per site?
MR. DOWNTON:
A. I have to--I can give you an approximate cost

Page 112

overall, if that's what you want. The approximate cost overall would be about $14,400.00 a month.
Q. And that covers how many sites?
A. That covers the existing 26 sites.
Q. And in preparing the numbers on Schedule 2, page 1 of 2 of your supplementary evidence, what is assumed with respect to those tower power and space costs for the nine sites that you would be keeping under the second scenario?
MR. DUNPHY:
A. I believe what was assumed is that it was the cost would be an average of the existing costs. I believe what they did was take the existing costs for 26 sites, divide it out and use that as an approximate cost per site.
MR. DOWNTON:
A. Just to add in to that, just for next year, when we move to next year, that 14,400 will, if you multiple that out by 12, I don't know what the number comes out, but next year, we'll have to pay an additional $36,000.00 a year for site and accommodation costs. What we are basically finding is that staying at

Page 113

Aliant sites is becoming increasingly costly and on average, we're finding that costs are going up about 10 to 15 percent a year over the last five years.

Q. Have you had discussions with Aliant about why these costs should be going up 10 to 25 percent a year?

A. Basically from their perspective, their costs are going up and part of it is their aligning consistent costing through the Aliant organization. Again, it's a cost that we're not in control of.

Q. Have you indicated to Aliant your consideration of moving from those sites?

A. Yes.

Q. And what has been their reaction to that?

A. Basically, no reaction.

Q. They don't care?

A. No.

Q. Have you inquired as to whether or not any of these costs are subject to regulation or might be the subject of a complaint to the CRTC?

A. No, I have not.

Q. Just to look at the numbers you have on Schedule 2, page 1 of 2, there's a difference

Page 114

in what you've called here, O&M costs of $272,000.00 in each year, is that correct?

MR. DUNPHY:

A. Without having a calculator, that looks about right.

Q. Oh no, I'm sorry, that is not the right number because there are other differences. I was looking at the NPV comparison, it's 295,389 I'm told, anyway, it's handy on $300,000.00.

A. Yes.

Q. And this deals with, as I understand your earlier answers, solely tower power and space costs for 9 nine sites, is that correct?

A. I believe so, yes. No, I'm sorry, that's not true. It deals with tower power and space costs as well as leased facility costs which we would not incur if the repeaters were in our sites.

Q. Okay. So, if they're on your sites, then they're going to use your microwave or something else?

A. Yes.

Q. Okay. So, can you quantify for us the amounts that relate to the trunking costs per site?

A. Not without a calculator, no. I can go back

Page 115

to the engineer who did this and retrieve those numbers.

Q. Okay. I'd like you to do that, if you can, because the presentation of the gross figures here doesn't really allow us to compare what's going on from one scenario to the other. (UNDERTAKING).

On page B71, you're reporting VHF failure statistics in the box at the bottom of the table.

MR. DOWNTON

A. Yes.

Q. Can you tell us the nature of the failures that you say have been associated with the switch in 2003?

A. I'll ask Mr. Dunphy to speak to that.

MR. DUNPHY:

A. In early 2003, the switch experienced multiple complete failures which usually required intervention by an Aliant personnel to bring the system back in service. They were total catastrophic failures.

Q. Did you determine a cause for those failures?

A. No, we did not. We did significant testing. Aliant spent several weeks replacing cards

Page 116

with spare modules, trying to isolate the cause of the problem. In the end the cause could not be isolated.

Q. And have the failures continued?

A. The failures have slowed. We're not saying the same rate of failures, but we've have two documented failures and I'm told two undocumented failures since then.

Q. Since the end of February?

A. Since the end of February, yes.

Q. Okay. And that is up to today in July?

A. That is up to last week.

Q. Okay. So, when you talk about undocumented failures, I presume if you went and looked for VHF failure statistics, you wouldn't find the undocumented ones, would you?

A. That's why their undocumented.

Q. Okay. So, if this cable was extended and you had one column for January to February 2003 and another for March to July 2003, the number that would be in the last column would be two.

A. The number that would be in the switch column would be two.

(12:04 p.m.)

Q. Would be in the switch column, yes, okay.

Page 117

What does facility mean, in this table?
A. Facility is a term we use to refer to the leased facility from Aliant between the switch and the repeater. So that if it was determined that it was solely an Aliant problem, it was put in that category.
Q. Okay. And the failure statistics under repeaters, I take it that's a total for all the repeaters?
A. Yes.
Q. Okay.
A. In addition to the two switch failures, we have also had three facility and four repeater failures since the end of February as well.
Q. Okay. The existing demand on your system solely from Hydro's point of view, I take it, is essentially 350 units, is that right?
A. User units are approximately 350, yes.
Q. Yes, okay. In the proposal that you're asking the Board to approve at this stage, is there a capacity limitation in terms of number of units that can access the system?
MR. DOWNTON:
A. The initial design will be to handle the existing capacity plus be expandable. So,

Page 118

there is no known capacity limitation.
Q. When you say -
A. What I basically say is that if we have 350 units and that's what we will design the system to, however as part of any prudent design, we'll basically also ensure that the system can be expanded to handle additional capacity.
Q. And that leaves out, I take it, the potential for Works Services and Transportation to use the system as well.
A. Basically the way that the traffic between Hydro and Works Services works is that, is a complimentary traffic. So, what we have found is that for the most part, one repeater per site adequately supports both parties.
Q. Okay. When you say, for the most part, are there any sites now that have more than one repeaters?
A. Well, basically, we internally have an issue with the Great Northern Peninsula because it is a high maintenance, in particular the winters on the GNP are typically very severe. So, we have an internal problem with regards to gaining access to the system there.

Page 119

Q. My question was, are there any sites now that have more than one repeater?
A. No.
Q. You perceive there may be a need for more than one repeater at some -
A. Based on the preliminary traffic analysis that was done by the consultant, that was the consultant's recommendation as well.
Q. Okay. What is the projection over the next five years for additional requirements for Hydro users on the system?
A. None that I know of.
Q. So, as far as you're aware, there is no need for expansion for Hydro's purposes?
A. Not that I'm aware right now.
Q. Okay.
A. However, if Hydro should add Island Pond as a for instance and other transmission lines, then those requirements would have to be looked at as part of those particular developments.
Q. Is the expandability an issue at all when you don't have a central switch?
MR. DUNPHY:
A. We're told by the manufacturer that it is not.

Page 120

I don't recall the numbers, but the manufacturer tells us that it can handle some astronomical number of sites and users.
Q. But presumably if you were going with a system with a central switch, there would be a capacity question about that switch.
A. Every system that I'm aware of has capacity limitations for switches.
MR. DOWNTON:
A. And depending on the manufacturer and the design, the number is different. As a for instance, for some switches, once you get beyond, say, 20, or I should say 50 repeater channels, you have to put in a new switch. Other ones--the break point would be 25. Another manufacturer break point would be 35. So, if you add more than 35 repeaters, you have to add another switch. So, really the break point changes depending on the manufacturer, as does the cost.
Q. Is there the possibility of adding modules to a switch to accommodate additional capacity?
A. Basically, my understanding and Gerard can correct me, if I'm wrong, but I mean, if you have a switch bay that's designed for 35

Page 121

repeaters, if you have 20 repeaters, you can add the modules to go up to 35. Once you go beyond 35, you have to put in another switch.

MR. DUNPHY:

A. That's my understanding as well, yes.

Q. That is your understanding, okay. In terms of your discussions with your consultant about Passport, did it cause you concern that your consultant did not raise the possibility of Passport or a system like that in producing his report?

MR. DOWNTON:

A. No, it did not.

Q. Why not?

A. Primarily because, I guess, our consultant, I guess, just referred us to what he had already said in the report that the trunked radio market is ever expanding and technologies are changing on a very frequent basis. So it was not unexpected, from his perspective, that there was a technology out there that he was unaware of.

Q. So he regarded this as something new that he just hadn't come across?

A. Basically, it's something that he was unaware

Page 122

of, a manufacturer that he was unaware of.

Q. Okay. I mean, I take it from your earlier answer, Mr. Dunphy, that you don't know when Passport got up and running, do you?

MR. DUNPHY:

A. No, I don't know when.

Q. You visited only one site where it is running?

A. We visited one user, yes, a multiple site system, but one user.

Q. Yes, okay. And do you know whether or not Passport has been operating long enough to be a proven technology that will be safe for Hydro to use?

A. We believe that it is. The manufacturer has told us recently that they have over seven hundred sites in use right now. It's supported by Motorola, which is the largest mobile radio manufacturer, I would imagine, in the world. That indicates that Motorola certainly believes it has a future.

Q. When you say seven hundred sites, you mean seven hundred customers or seven hundred sites?

A. I believe--it was a verbal conversation, but I believe it was seven hundred sites.

Page 123

Q. Okay. So if your system were to be added, that would be another thirty-five sites?

A. Yes.

Q. Okay. And how large was the facility that--how many sites were involved in the one that you looked at?

A. Sixty-six.

Q. Just referring again to the Supplementary Evidence, you refer there to Mr. Barreca's evidence and the suggestion that there be a delay in the replacement of the repeaters. Have you done any specific study which would indicate the time frame over which the repeaters may need to be replaced?

A. Well, from our point of view, the repeaters need to be replaced now. They've been manufacturer discontinued for quite some time and we're finding it increasingly difficult to obtain spare parts.

MR. DOWNTON:

A. Our understanding from Motorola is that the parts were stopped manufacturing in 2000 and the only parts available for the MSR 2000 right now are what is in the system, and looking at extending out the replacement of

Page 124

those repeaters for an additional say five years, to my mind, is risk, and what I see is that the increased--the maintenance on those units will increase and I guess from our analysis, what we've shown is going out and doing multiple field visits to reinstall repeaters at some future point does not show itself to be a cost effective alternative.

Q. The illustration that you've chosen here though to set out in Schedule 1 involves the replacement of twelve repeaters in 2004, correct?

A. Yes, that's correct.

Q. Okay. It doesn't delay the replacement of repeaters generally for three to five years?

A. Well, we decided--well, we needed six, I believe we said, six repeaters to meet the existing coverage requirements we have and what we proposed was to relocate six sites from Aliant facilities to Hydro's facilities, based on the analysis that increasing costs from Aliant justify that relocation and installation within our sites. And that's -

Q. How is it that you find six sites that have to be done in 2004, where you never had a

Page 125

repeater before?
MR. DUNPHY:
A. To address the increased coverage requirement.
MR. DOWNTON:
A. We basically have coverage issues now in Happy Valley, Southern Labrador, Granite Canal. Granite Canal would have been added to the existing system if, I guess, the mobile radio proposal was approved in 2001, and so we have outstanding coverage issues that we need to deal with and that's basically what we're putting forward.
Q. But I mean, how are you handling those coverage issues now?
A. I guess, if you don't mind, Ken, I'll defer that a little bit to you. But I guess, bottom line is we are having to do (unintelligible).
(12:19 P.M.)
MR. MCDONALD:
A. Yes. In those situations now, slow though it is, we use a relay system where we can have workers stay on mountaintops that can relay our messages to ECC through a relay system. We also employ satellite phones. Satellite phones are a recent acquirement of ours.

Page 126

Those work fairly well in most situations. We are having problems in foliage areas. If it's high tree areas, we have to travel to areas that are more open. We also have problems in steep valleys or side hills where we don't get a shot of the satellite from the right-of-way where we're working. That's essentially--and of course, cell, where we can, but there are not many of those places where we can use cell in places we work, and I really can't speak for Labrador. I don't know how they're managing their problems over there in Southern Labrador.
Q. I take it, other than Granite Canal, these problems have existed for some significant period of time?
A. That is true.
Q. And you've been able to get by?
A. We did.
Q. Yes, okay. Mr. Chair, I'm going to suggest that we break a few minutes early because I did want to review the undertaking information and hopefully be able to finish up quickly after lunch.
CHAIRMAN:

Page 127

Q. That's fine, Mr. Hutchings. We'll break until 1:30.
(12:20 P.M. - LUNCH RECESS)
(RESUME - 1:31 p.m.)
CHAIRMAN:
Q. Good afternoon. Okay. Before we recommence I think Ms. Newman has something to say in connection with the schedule.
MS. NEWMAN:
Q. Yes, thank you, Mr. Chairman. The Board's calendar has now become free for tomorrow. And I have canvassed the parties and everyone is prepared to proceed with this matter tomorrow morning on the usual schedule beginning at nine and proceeding to 1:30 with two breaks. I foresee this panel finishing sometime, maybe hopefully this afternoon and then John Roberts will testify either this afternoon or tomorrow morning. In the interests of getting Mr. Barecca finished and also to accommodate Dave Reeves, who you'll recall was out of town on a family matter, we'll proceed with Mr. Barecca after John Roberts and then that final panel, the TRO panel will go on behalf of Hydro. And I

Page 128

understand everybody is fine with that order.
CHAIRMAN:
Q. Okay. Good. So we're back to you, Mr. Hutchings.
HUTCHINGS, Q.C.:
Q. Not quite, Mr. Chair.
CHAIRMAN:
Q. Not quite.
HUTCHINGS Q.C.:
Q. And I understand Ms. Greene has some answers to undertakings from this morning.
CHAIRMAN:
Q. I'm sorry.
GREENE, Q.C.:
Q. Yes. Mr. Chairman, there were four undertakings provided this morning. And at this point in time we are in a position to respond to three. And it may be helpful if we do it at this point before Mr. Hutchings concludes and before Mr. Kennedy commences.
CHAIRMAN:
Q. Okay.
GREENE, Q.C.:
Q. The first undertaking that we wish to address was with respect to the Zetron product and why

Page 129

Zetron was eliminated as an alternative product for the VHF mobile radio system. And, Mr. Dunphy, did you have the opportunity over the break to review your notes with respect to that?

MR. DUNPHY:

A. Yes, I did.

Q. And could you please advise why Zetron was eliminated as an alternative product?

A. Yes. I should begin by saying we conducted extensive discussions with Zetron personnel. In fact, we visited their factory. We also visited a customer that they recommended to us as being somewhat similar in application to our needs, that was a customer in British Columbia. The British Columbia user was a relatively small system compared to our needs. I don't recall exactly what the size of their system was. However, their biggest complaint with the Zetron rack system was that a user was required, upon roaming from one site to another one, to re-register with the system manually by keying their radio, and that was their--that was their single biggest complaint with the Zetron system, the fact that their

Page 130

users would forget or not know when they had roamed from one site to another one. Also, in conversations with the manufacturer they specifically told us that data was not recommended on the rack system because of the lack of privacy between radios, so that if there were transmissions of data on the system, all the users in the area would hear it. There was no redundancy. They also did mention that the Zetron could be configured, even though the standard configuration is as a small stand alone switch, it could be configured in a mesh topology, as Mr. Hutchings mentioned this morning. However, it's a very complex design and required a tremendous amount of resources. It was also, generally speaking, a single user system and there was no site controller, which meant that we had no remote site visibility. So, for instance, if one of our remote sites that was accessible only by helicopter was out of service, it would require a trip via helicopter to verify exactly what the problem was. Those were the primary reasons why we decided that the racks wasn't a suitable

Page 131

product.

Q. The next undertaking related to providing the cost estimate undertaken by Hydro of the passport system. And I have copies of this estimate to distribute at this time.

CHAIRMAN:

Q. Would that be U-Hydro 21?

MR. KENNEDY:

Q. 22, Chair.

EXHIBIT ENTERED AND MARKED U-HYDRO NO. 22.

GREENE, Q.C.:

Q. Mr. Dunphy, who prepared this estimate?

A. That was prepared by myself.

Q. Would you please explain the estimate that we've just distributed?

A. Yes. In 2001 we obtained a written estimate from Aliant on a passport system. Earlier this year in preparation for our capital budget we reviewed the costs with Aliant. They advised us that we should take their estimate and add 10 percent to cover increased costs. Other items that were not included in their estimate but that either we identified internally or Mr. Cook had identified in his report were included in the relative sums that

Page 132

were felt appropriate.

Q. And what is the estimate indicated on U-Hydro No. 22 for the passport system, what's the total?

A. You'll have to forgive me, I didn't keep the paper copy.

Q. Oh.

A. Thank you. The total estimate for materials is $5,781,834.

Q. And this was prepared by yourself?

A. Yes.

Q. Okay. The last undertaking that we're in a position to respond to at this time related to Schedule 2 to the supplementary evidence that was filed on Friday past, and it related to what was included in the operating and maintenance costs. Could you please look at Schedule 2, Mr. Dunphy, of the supplementary evidence?

A. Mr. O'Reilly. Thank you. Yes.

Q. And could you please indicate the answer to the question?

A. Well, as I had suspected, the estimate for--the difference between 14 Hydro owned sites and 5 Hydro owned sites can be explained by

Page 133

taking the O and M costs, which I explained are facility, estimated facility costs. An average was taken by dividing that by 21, which is the number of sites that are leased in under the column 14 Hydro owned sites, to work out to an average of approximately $27,000 per site, per year. As well, the figures that were used for tower power and accommodation was actually $120,000 which again was divided by 21 sites to come up with an estimate of approximately $5,700 per site, per year. Those two numbers were added and it was assumed that those averages would apply to the nine extra sites. So if you add those two numbers, multiply by nine, you'll see the difference between the two O and M costs.

Q. Okay. Thank you. That concludes the three undertakings we're in a position to respond to. There's one outstanding which is a schedule outlining the location of printers that are to be replaced. And that hopefully will be available before we conclude this afternoon. Thank you.

CHAIRMAN:

Q. Thank you, Ms. Greene. Now, Mr. Hutchings.

Page 134

CROSS-EXAMINATION OF PANEL BY HUTCHINGS, Q.C.

HUTCHINGS, Q.C.:

Q. Yes. Thank you, Mr. Chair. Mr. Dunphy, I'm just trying to relate the numbers that you just gave us, the 27,000 per site, per year, plus the 5700 per site, per year to the $1440 per month for 26 sites that was mentioned before lunch.

MR. DUNPHY:

A. Yes.

Q. How do those numbers interact?

A. Well, they don't, really. The $27,000 is a digital facility, whereas the current facilities are analog under an older contract. Also, the tower power and accommodation, I believe Mr. Downton mentioned the cost for tower power and accommodation was--I'm sorry. If you can refresh my memory; I don't remember the exact number, but it was slightly higher than the number that was used in this estimate to give a ball park figure. The assumption was that tower power and accommodation was approximately $120,000 a year, which is actually a number that's a couple of years old.

Page 135

Q. I understood that the tower power and accommodation was the 14,400 per month. Is that not correct?

MR. DOWNTON:

A. That was the number that I got from, I guess, the team lead on the networks group.

MR. DUNPHY:

A. When this was done, the number was assumed to be assumed to be $10,000 a month.

Q. When Schedule 2 was done, you mean?

A. Yes.

Q. All right. I'm just trying to puzzle through. So the tower--okay, the tower power and accommodation that you used for the purpose of Schedule 2 was 10,000 a month, and in actuality it's fourteen four a month?

A. Yes.

Q. Okay. And tower power and accommodation in respect of all of the sites in question are included in both sides of this schedule?

A. No, they're not, because they're only included for the extra sites that would be added under the five Hydro owned sites scenario.

Q. Okay.

A. Because I understand--if you look at the last

Page 136

column, there's a subtraction there, so if there are common costs, they would be subtracted out.

Q. No, the last column is just the difference in the cumulative present worth?

A. Yes.

Q. It has nothing to do with the common costs? So what you're saying is that the common-- these would be common costs -

A. If there's a common O and M cost -

Q. - from both sides?

A. If there is a common O and M cost that is consistent every year throughout the entire life of the system, then it is my understanding that that is not necessary because it's subtracted one from the other.

Q. Yes, that's right, that if they would be an addition to both -

A. Right.

Q. - comparative numbers then they simply wash out. That's fine. So what you're telling me is that in the 14 Hydro owned sites--no, in the five Hydro owned sites number you have an additional 10,000 per month for nine sites?

A. An additional 10,000 per month for nine sites?

Page 137

No. We have an additional 5700 -
Q. Okay. Yeah, your 10,000 -
A. - per site.
Q. Your 10,000 is for the--for all 21 sites?
A. 10,000 is for--yes.
Q. 10,000 a month is the total for all 21 sites?
A. Yes.
Q. Okay. So you put in an extra 5700 per site, per year in the schedule, okay. So that's 51,000 of the difference?
A. Yes.
Q. And the balance of the 240 odd thousand?
A. Is the leasing of--the assuming leasing charge of 569,250 divided by 21, multiplied by nine.
Q. Okay. And that has been escalated because we're talking about digital equipment rather than analog equipment?
A. Yes.
Q. Okay. And what was the amount for analog equipment?
A. I do not know, sir. This particular scenario was only done for digital equipment.
Q. Okay. And I thought Mr. Downton had told me this morning what those site costs were currently?

Page 138

MR. DOWNTON:
A. Yes, I believe I said that in my evidence. I believe I said about $14,000 a month.
Q. I wasn't referring to the tower power and space now. I'm talking about the accommodation charge.
A. Tower power and space is accommodation charge.
Q. That includes--okay.
A. Now, that's what's referred to as accommodation charge is power, tower and space.
Q. And the additional charge you were talking about was basically the trunking cost?
A. Yes.
Q. Okay. And that was the 36,000 per year?
A. No. What I indicated was that based on discussions we had with Aliant, that the accommodation charge, which is power, tower and space will possibly increase by an additional $36,000 next year for Aliant sites.
Q. Okay. All right. We'll have another look at those numbers and if there's anything that we need to follow-up on, we can do that. In respect of U-Hydro 22, this estimate, I presume, involves replacing all the existing

Page 139

repeaters and adding six new ones. Is that correct?
MR. DUNPHY:
A. Yes.
Q. Okay. And these are all single channel repeaters?
A. The original proposal included an estimate of, I think, six sites--a small number of sites that would have two channels.
Q. Okay.
A. I believe it was six.
Q. And was the addition of the channels intended to deal with a capacity issue?
A. Yes.
Q. It wasn't for the purpose of accommodating a ring architecture?
A. No, the channels have nothing to do with the ring architecture.
Q. How can you make a ring architecture work with single channel repeaters?
A. The two are completely independent of one another. The ring architecture refers to the facility links between passport sites, whereas the channels refer to the means by which a mobile or a portable radio communicates with

Page 140

the system.
Q. I mean, how do the repeaters communicate with one another?
A. They communicate with one another via digital facilities which can be radio, they can be leased facilities, they can be a variety of technologies.
Q. Okay. And you're contemplating repeaters with alternative methods of communicating with other repeaters?
A. There will be some -
MR. DOWNTON:
A. Maybe I can -
MR. DUNPHY:
A. - sure.
MR. DOWNTON:
A. Okay. Maybe I can help clarify. Basically, if I'm in a mobile vehicle and I want to communicate to, say, someone else whereas Mr. Dunphy described earlier, I basically key up the radio which talks to the repeater. The repeater will then talk to the site controller, the site controller will then talk to a switch, if a switch exists, if one doesn't, it'll talk to another site controller

Page 141

to the repeater equipment, then out to the mobile, the other mobile person. So that's basically how it communicates. So if there's any digital facilities required or any required, the digital facilities are on the site controller's side facing towards a switch or facing towards another site. The actual connections do not face towards the end user. So what Mr. Dunphy said is correct, the repeaters and the site controllers are somewhat independent and you don't see the digital facilities through to the end user.

Q. Okay. So, your ring architecture basically relates to the connections between the repeaters and these are digital leased facilities or whatever, is that correct?

A. To the repeater sites, yes.

MR. DUNPHY:

A. Yeah.

Q. Okay. As I understand your current system, you would have one line coming out from each repeater?

MR. DOWNTON:

A. Yes.

MR. DUNPHY:

Page 142

A. Yes.

Q. Okay. Is it intended that there be more than one line with respect to the new system?

A. In most instances there probably will be more than one line, yes.

Q. Okay. So most of the 35 repeaters will have at least two lines coming out of them?

A. Yes. And again, this is what we discussed this morning. We're getting into details of design which are, you know, far beyond the scope of what we've done so far. But that is the intent.

Q. But the site equipment that you've budgeted here can accommodate how many lines coming out?

A. Most of these can accommodate two. And in fact, two is the default number. By accommodating one, you accommodate two by default.

Q. Okay. So these 35 repeaters we're talking about here are not identical, some of them have more functionality -

A. Included in there would be a few extra repeater radios, yes.

Q. Repeater radios?

Page 143

A. Yeah. The repeaters we talked about.

Q. Yes. But, I mean, the quantity that's here is 35?

A. Yes. There are 35 sites and included--it's not broken down but there are actually, I believe, 41 repeater radios included in that estimate.

Q. So you're considering six sites with two repeaters?

A. Yes. We've mentioned a couple of times already the fact that there are traffic issues on the Northern Peninsula so there are extra repeater radios in there to address those traffic issues.

Q. And this project calls for the replacement of all of the mobile radios and portable radios, as well?

A. Yes.

Q. Item 11 talks about antenna wave guide and accessories?

A. Yes.

Q. Where does that requirement arise?

A. That requirement arises in moving from leased sites to Hydro sites.

Q. Okay. So that's an additional $50,000 in

Page 144

cost?

A. Yes.

Q. Okay. Is that taken into account in Schedule 2 of your supplementary evidence?

A. I believe it is.

Q. And where does that show up?

A. That would show up in the capital costs.

Q. Capital costs?

A. In fact, I'm sure it is.

Q. Capitals costs in both are the same.

A. Yes. But we've deducted from--in the five Hydro owned sites--okay. Could you go to Schedule 1, please, Mr. O'Reilly.

Q. Schedule 2.

A. Schedule 2. Could you go to Schedule 2 again? No, the $50,000 does not appear to be deducted from the overall capital budget of 8.85 million, no.

Q. Okay. So that's an additional cost that you haven't taken into account?

A. No. That is true. However, the cumulative present worth over 15 years of $2.4 million will not be significantly affected.

Q. But plus or minus ten percent, which is the rule you say you use would put those numbers

Page 145

almost identical, wouldn't they?
A. I'm sorry, which numbers?
Q. 13.1 and 15.5, you take ten percent off one and put ten percent on the other, you've very close, aren't you?
A. Could you repeat that?
Q. If you add ten percent to 13,122,000, you're up at 14.4 million? Right?
A. Okay, yes.
Q. If you take ten percent off 15.5 million, you're down around 14 million?
A. Yes.
Q. So at ten percent plus or minus this analysis is not statistically significant?
A. Oh, if it's ten percent plus or minus, it is ten percent plus or minus on both sides of the equation. It is not--it's the same system, so it's not ten percent plus on one and ten percent minus on the other.
Q. Ten percent plus or minus can go either way on either number, correct?
A. Well, no, I don't think so. We're talking about the same capital. You can argue that the least costs may be different by plus or minus ten percents, but we're talking about

Page 146

the same capital program, so the capital costs will be, you know, identical except for the small error not including antenna wave guide. If it's plus ten percent on one side of the equation, it's plus ten percent on the other.
Q. That may or may not follow.
A. Oh, I think it certainly does.
Q. When was it that you visited British Columbia to check out the Zetron system?
A. 2001.
Q. In 2001?
A. Yes.
Q. And I take it from your reference to Aliant in connection with U-Hydro 22 that when you refer to your supplier this morning, you were talking about Aliant, is that right?
A. For the passport estimate, yes.
Q. Yeah, okay. Now, you told us this morning that the passport system is actually a protocol. What actual equipment are we talking about here?
A. In the estimate?
Q. Yes.
A. The site equipment would include a site controller, it's called--the product name is

Page 147

NTS.
Q. Um-hm.
A. It would also include repeater radios.
Q. Okay.
A. The repeaters themselves.
Q. Okay. Are they NTS items, as well?
A. No. They would be Motorola radios.
Q. Okay. And if you were to go with the system, I mean, would you deal with a single supplier or would--who would acquire this equipment, then put it together for you, or would you deal with individual providers?
A. We would issue a turn key contract.
Q. It would be a turn key contract?
A. Yes.
MR. DOWNTON:
A. We would go to tender and basically the intent of the intent of the tender would be the vendor of choice would provide system to meet Hydro's requirements.
Q. Okay. You gave us some information this morning in connection with the End User and Server Evergreen Program B-66. Rough figures for the total of the cost of the thin client devices, the desktops and the laptops come up

Page 148

to a little over $400,000, I believe, where you had told us there was roughly 70 odd of each of these three items. You know, you can play with one or two, I guess, but it comes out whichever way you do it probably around between 405 and 425,000 dollars for those end user devices. Would you agree with that?
A. Oh, well, you were doing the calculations.
Q. No, I mean, all we've done is take 73 thin clients at 1200, 74 desktops at--no, 74 laptops at 2800 and 73 desktops at 1600 and we come up with $411,000.
A. Okay.
Q. What's the balance of the 2.4 million for?
A. The balance of 2.4 million is--what you've only looked at there is a small component. Like I said, there is four programs within the End User Infrastructure Evergreen capital job cost. The desktop Evergreen portion, and that's all you really asked about, basically, your estimate is a little bit low, but what's included there is installation costs to actually install all of those 220 units across the system. I also mentioned that there is a service desk tool that we're looking at for a

Page 149

cost of 130,000.
Q. Okay. Can I just stop you for a moment? The B-66 shows a material supply amount of 2.4 million. Are you telling me that some part of that is actually labour?
A. This is supplier install.
Q. Okay. And what--the numbers that you gave me for the individual units, I take it that doesn't include the cost of installation of them?
A. No.
Q. And is that done by your supplier?
A. That will be done by our supplier.
Q. Okay.
A. Actually, it will be done--yes, it will be done by a supplier, yes.
Q. Okay. And what does he charge you for that?
A. He has a per unit cost for installation. And if there's any applications over and above what fits on the corporate image, then those applications have a per unit cost additional.
Q. Okay.
A. Our -
Q. So what's the number, then, for the supply and install of the end user units?

Page 150

A. Our estimated number is approximately $95,000.
Q. That's just the install, I take it, 95,000? Because we've got $400,000 odd worth of units.
A. Yes, yes, just install.
Q. Yeah, okay. No, my question was supply and install. So if I add the 411 odd or--do you have a better number for that?
A. Well, basically the desktop evergreen program to supply and install basically the units is approximately $700,000. Because what you didn't ask, which I'll basically offer, is the fact that the Citrix thin clients require a server to support those, so basically there has to be a server behind the thin clients and then basically once you look at the total thin client environment and your desktop and laptops, that basically will--and installation will come out to $700,000.
Q. Is there a reason why you didn't tell me that earlier?
GREENE, Q.C.:
Q. Actually, if you refer to the transcript from July 7th starting on page 48 the details of the four components of this project was provided in direct evidence.

Page 151

HUTCHINGS, Q.C.:
Q. I understand that. But the numbers that I have asked for were not provided and I'm -
GREENE, Q.C.:
Q. They were provided, what you asked for.
HUTCHINGS, Q.C.:
Q. I'm finding difficulty in relating the numbers I now have to the questions that I asked. So -
A. Mr. Hutchings, I gave you the information that you requested.
GREENE, Q.C.:
Q. We also gave you the total breakdown of the project, as I say, starting on page 48 of the transcript of July 7th.
HUTCHINGS, Q.C.:
Q. So the cost to install these thin client--these end user devices and these include the thin client devices, the desktop devices and the laptop devices is $95,000, is that correct?
A. Yes.
Q. Okay. What is your figure for the total cost of acquisition of thin client devices themselves, just the Neoware?

Page 152

A. Just the Neoware boxes?
Q. Yeah.
A. Basically that would be 73 times the number that I gave you this morning.
Q. That's 73 times 1200?
A. You're talking about the Neoware boxes?
Q. Yes.
A. I guess the question is are you asking for the servers -
Q. No, but I will.
A. - that have to go behind that?
Q. I'll get there. The Neoware boxes themselves total $87,600?
A. That is the math, yes.
Q. Assuming the math is correct, 73 times 1200. The desktop devices, you gave me a figure of $1600 for each device. How many devices are there?
A. Can you repeat the question? How many desktops?
Q. How many desktops are you buying?
A. Approximately 73.
Q. Approximately 73, okay. And that would be $116,800. How many laptops are you buying?
A. I guess whatever those two totals are,

Page 153

subtract it from 220. We're buying 220 units.
Q. Okay. That should leave us 74?
A. Yeah.
Q. At $2800, which is $207,200, which gives us the $411,600 that we spoke of earlier. If we add that to the $95,000 installation cost, we have a total of $506,000. Now, can you explain to us what you get for the additional $193,400 to bring you up to 700,000?
A. Could you repeat what makes up the 600 in your calculations?
Q. No, there is no 600. There is 506,600.
A. 500.
Q. That includes 73 Neoware devices, 73 desktops, 73 laptops and $95,000 to install all of that.
A. The additional costs would be for the Citrix servers which are required to -
Q. Could you spell that for us?
A. C-I-T-R-I-X.
Q. Citrix servers, yes.
A. And they will basically interface with the Neoware boxes.
Q. How many of those will be acquired?
A. I do not have the exact number.
Q. Can you find that out for me? (UNDERTAKING)

Page 154

A. Yes.
Q. Okay. So is the entire balance of the $193,400 for the Citrix servers?
A. For Citrix servers and the licensing costs for the Citrix servers.
Q. Where, physically, are the Citrix servers installed?
A. The Citrix servers will be installed in St. John's.
Q. At Hydro Place?
A. Yes.
Q. How many end-user devices are being retired as a result of these 220 new acquisitions, if any?
(2:06 p.m.)
A. Basically, as I think I indicated when we started the Evergreen Program in 2000, I believe, we had approximately 850 units and when we refresh this time, we'll be refreshing for approximately 737 units.
Q. So when you're finished, you'll have 737 units?
A. Yes.
Q. And you don't know exactly how many are in service today, do you?

Page 155

A. About 850.
Q. 850. So in respect of the installation costs, would it be fair to assign one third of the installation costs to each of the Neoware, desktops and laptops?
A. No.
Q. How would you fairly assign that?
A. Basically as part of the Neoware box installation you have to take into consideration the configurational set up of the services, Citrix servers which have the support, so there's not a direct comparison of one-third, one-third, one-third. It's, I don't know what the exact breakdown is, I don't have it here.
Q. But there should be more assigned to the Neoware than to the laptops, for instance?
A. Yes.
Q. Yes, okay.
A. I'll confirm that. (UNDERTAKING)
Q. Yes, okay. So the Citrix servers, I take it, do nothing other than to serve the thin client devices, is that correct?
A. Yes.
Q. So if we look at an all-in cost for the

Page 156

individual units of the Neoware devices, we have to take into account their cost themselves, which is $87,600.00, the cost of the Citrix servers which is $193,000--well that takes into account the licensing costs, have you broken those out?
A. I don't have that detail here.
Q. Is the licensing costs just for the Citrix servers or -
A. Yes.
Q. It is, okay, so that's all part of the one cost. So there's the 87,000 for the hardware, 193,000 for the Citrix servers themselves and something more than a third of $95,000.00 for the installation? Is that fair?
A. Well all I can say is that $95,000.00 is the installation cost for the 220 units.
Q. Okay, if we assign only a third, which your indication was is probably not enough of the installation cost to those thin client devices, they're coming out at an average price of over $4,000.00 per device? Is that a correct conclusion?
A. Well if I were to do a rough math, at $700,000.00 for supply and install, based on

Page 157

220 units, I would come out to about $3,000.00 a unit.
Q. Pardon me?
A. We're looking at 220 units.
Q. Yes.
A. At about, I indicated approximately $700,000.00, so that will be 220 divided into 700 which is approximately $3,000.00 a unit, maybe a shade over.
Q. But I mean, that's lumping them altogether, correct? I'm just talking about the thin client devices now, okay. You told us that the Citrix servers are purely for the thin client devices. If you add up the cost of the Citrix servers and the thin client devices themselves and add an allowance for part of the installation, part of the $95,000.00, the thin client devices themselves end up costing more than the laptops, per unit?
A. I'd have to go back and check my numbers, I can't do those calculations without the detail to determine those costs.
Q. Would you agree with me that the notion of moving the thin client devices, that thin client devices are supposed to be a more

Page 158

economical alternative than a desktop or a laptop?
A. Yes, they are, and they are.
Q. Well, perhaps it's best that I leave it with you and you can look at the numbers and let me know why my numbers seem to be coming up showing these things being much more expensive than anything else you're buying here. (UNDERTAKING) I think, Mr. Chair, subject to any further questions that arise out of the satisfaction of the undertakings, those would be all of the questions I would have at this time for this panel.

CHAIRMAN:

Q. Okay, Mr. Hutchings, thank you. Mr. Kennedy, do you have some questions?

MR. KENNEDY:

Q. Chair, I do.

CROSS-EXAMINATION OF PANEL BY MR. MARK KENNEDY

Q. Gentlemen, I'd like to start first, if I could, with just a quick discussion about your budget process and Mr. Haynes, you might be the person best suited to answer those questions. In the direct evidence that was filed in support of the Capital Budget

Page 159

Application, and that would be the production section, Mr. O'Reilly and page 1 I'm interest in and down at line 19.

MR. O'REILLY:

Q. Is this the supplementary or the original?

MR. KENNEDY:

Q. No, this is the original. Please scroll to the line towards the bottom, Mr. O'Reilly of that page. Yes, there you go. Mr. Haynes, you've identified there that there are four primary areas of focus in identifying capital projects and you indicate that the first was safety, the second is compliance with environmental regulations, the third relates to reliability and then the fourth, which is over on the next page is to reduce cost or improve efficiencies.

MR. HAYNES:

A. Yes.
Q. And I take it generally then, capital projects are meant to fall under one of those four categories?
A. Generally.
Q. In reviewing your Schedule B projects, I was trying to conceptualize, if you will, the

Page 160

different types of treatments afforded to the different types of projects. And I guess I've got four different approaches, if you will, taken by Hydro in putting forward a project for approval under its Capital Budget Application, and I've used a project to help describe each of those and that's what I was going to go through now. And I was wondering if you could comment on those. The first one is one you've been examined on already and that's B-5 which is the exciter for No. 7 Unit at Bay D'Espoir. And this is a project that Hydro put forward initially as part of its 2003 Capital Budget Application, correct?
A. That's correct.
Q. And you sought and obtained Board approval to expend $13,100.00 towards this project?
A. Yes.
Q. Now, clearly if that, in and of itself was considered a project, you wouldn't have needed Board approval because it doesn't hit the $50,000.00 limit, correct?
A. Well we would have Board approval for the overall Capital Budget, but we not have provided any detail, no.

Page 161

Q. And could you tell me what's the purpose of the $12,000.00 budget for engineering work at that point?
A. Generally in the engineering department, if it's a capital job, they charge their time off to a capital job cost and if we were going to spend "X" number of personal weeks on a particular project which we had full confidence or at least a good degree of confidence would actually translate into a capital budget, we would prefer to charge that time to the capital. We don't have a "slush" fund for capital projects. I mean, we do things off the side of the desk, obviously, as anybody does, but this is a defined project. This is engineering time usually later in the fall to prepare the specification to ensure that we are ready to go to tender and have a project that we can deliver in the early schedule.
Q. Okay, so if I'm gathering you correctly then, the intention at least is that when you seek approval from the Board, as was the case for this particular project, for an engineering related expenditure, in this case of

Page 162

$12,000.00, that's so Hydro can do the detailed engineering that's required to set yourself up for a tender and a purchase in the main part of the project in the subsequent capital year?
A. To prepare specifications, occasionally to hire consultants if it's a technical expertise that we need, such as we did for the, for instance the energy management system. Like, we will not be placing an order for the energy management system until late fall or early next year, pending the approval, but that 13 million dollars would have included consulting fees as well for specialists in that area. So it can take two or three forms, but typically and ideally there was no tender award. Occasionally it was a multi-year job. Granite Canal, for instance, we obviously had to make commitments.
(2:16 p.m.)
Q. So when Hydro put forward this budget, this project in particular, as part of its 2003 Capital Budget Application which would have been taken in 2002, was the numbers projected for your 2004 expenditure the same as what

Page 163

you're showing now in this -
A. I don't recall if it was the exact same number. We do do a review and just do a reality check, you know, as we indicated in other testimony this morning, I mean the numbers are generally plus or minus ten percent. If it's in the ballpark, we generally don't change it unless something came to light to indicate there was a specific need to revise the numbers. Generally they stay more or less the same, but they can change.
Q. Because I think it was the case that according to the revised section F that was filed, that that $13,000.00 hadn't been spent yet.
A. Not yet, that's a resource issue with the engineering staff themselves.
Q. Sure. You're up to your eyeballs with Granite Canal and everything else.
A. Generally speaking and other jobs, yes.
Q. And other jobs. But if it hadn't been spent, then presumably the detailed engineering work has not been done.
A. If will if the intention is to complete it this fall.

Page 164

Q. Okay.
A. It will be done.
Q. And that after that detailed engineering work is done, you would at that point, presumably issue a tender?
A. Yes.
Q. And based on the replies to those tenders, you'd pick the lowest cost bidder or what you feel is the best price for performance that you're receiving?
A. The evaluated tender that meets their needs, it may not be the absolute lowest cost, but it would be justified; typically it is, but not always.
Q. Right. And then if there's an adjustment, it's made in the following capital year, it just a variance on your Schedule F again from what you're projecting you were going to spend in 2004 to what you actually spent?
A. Yes, I mean, when the capital job cost is closed, it might be $700,000.00. It might be $783,000.00, there are limits where they can go above and beyond before they have to come back for approval. But typically speaking, we are--our intention and our desire is to come

Page 165

in basically not to exceed the budget.
Q. Okay, let's just look at another one, B-16, and that's the--again, just trying to pick ones that you've already looked at and asked questions on and gave replies to. And this is the replacement of the loader backhoe. And again, this was one of these projects that you put forward as part of the 2003 Capital Budget Application.
A. That's correct.
Q. And there was a very small amount there for engineering again, $3,000.00?
A. That's done by our Bishop Falls staff and our fleet management, they would just basically do a specification and be prepared to go to tender. Sometimes they're long delivery, sometimes it's not. It's their best guess, they need to do some preliminary work prior, and we would like to have that piece of equipment, obviously, early in the year before we start the summer maintenance program. So we'd be looking for an earlier delivery than -
Q. You'd want an early 2004 delivery on the backhoe?
A. Preferably, if at all possible.

Page 166

Q. So again it's a case of your engineering work sets you up with a detail specification of the type of equipment you actually want order fulfilled?
A. That's correct.
Q. But now, if we go back to the exciter project again, B-5, in this one you say that the exciter will be an ABB Unitrol P, similar to that used on Units 1 to 6 in Bay D'Espoir?
A. Yes.
Q. So in the case of project B-5, you've got a specific piece of equipment in mind?
A. We have a general piece of equipment in mind to maintain standards in training to reduce those costs, but when it comes down to the specific machine, its program and parameters for Unit No. 7 would not be the same as for Units No. 1 and 6. There are differences between the units, there's different--it's a different size turbine, there's a different generator, different limits that it has to abide by to protect -
Q. Sure. It's not as simple, as I think has already been indicated, it's not a simple off the shelf plug and play kind of arrangement.

Page 167

A. No, no.
Q. There's engineering involved, but you have more of a lock on the specifics of what piece of equipment you're looking for, right?
A. Yes.
Q. In the case of B-16, backhoe is just a backhoe, I take it colour, shape doesn't really to Hydro, just as long as it meets the specifications?
A. I would assume so. In Churchill Falls they had a preference for a certain type of machine and Hydro, I think it's a bit less, but in Churchill there's a slight different reason for that. Services here from different vendors are more available.
Q. Right.
A. I'm assuming, I did not ask if they wanted a specific, for instance, Catapiller, or whatever, I assume it's open to the lowest acceptable tender that can do the job, as long as he meets the specification.
Q. And then we have, of course, B-71 which is the VHF project. And as I think--and I've got some detailed questions about the VHF project itself, but I think it's fair to say that at

Page 168

this point in time the project figures provided in B-71 are Hydro's best estimates of the amount of money that this is going to require?
A. Yes, as are essentially all the Capital Budget proposals, they are based on our best estimate and most of the time, if not all the time, I'm sure occasionally we miss, but by and large we don't do too bad on -
Q. Okay, but the thing that differentiates B-71 from, for instance, the backhoe project or the exciter project is that as opposed to the exciter project where you have a specific piece of equipment in mind and as opposed to the backhoe project where you know you're buying a backhoe, in B-71 you're using estimates but you're also at this point, if I'm gathering correctly, and I guess we can ascertain that or hopefully it already has been, you're leaving your options open about exactly what piece of equipment you're going to end up buying.
A. We would--the approach that would be taken would be to go out with a functional specification, this is what we need to do our

Page 169

job and we would be open to vendors who bid any system and we would evaluate it based on the costing, reliability and other issues. And we will come up with a preferred vendor.

Q. And I guess particularly in the case where you have a multi-year project, there's time to make subsequent adjustments in what your actual capital cost comes in at, verses what your best estimate is at this point?

A. What we had provided in one of the RFI's was that depending on where Work Services & Transportation were, for instance, you know, if they made a capital contribution, that we would actually revise the 2005 cash requirements to reflect that. And if we--I would also suggest that in 2004, if we go out with a functional specification and Motorola, Aliant, I really don't care who comes back and it meets with the specification and does the job and there is a revised number for the latter cash flow, that we would also revise that in a subsequent submission to the Board.

Q. And can I ask why in this case, in B-71, Hydro wouldn't have considered taking the approach similar to what you did in B-5 and B-16 where

Page 170

you apply for a small amount of engineering budgetary approval in order to do more detailed analysis on generating a spec, so that you can then come to the Board and seek specific approval for the larger amount based on a specific piece of equipment and a specific budget item?

A. I would suggest and Mr. Downton can interrupt me if I'm wrong, but when we go out for an exciter, we basically know the parameters, specific typing of parameters, it has to have a certain voltage, a certain current capability and a certain, you know, transfer function, if you will, certain characteristic of when it's operating for voltage change and current changes. On a backhoe we know we need to be able to have certain reach and so on. On the VHF, if you go out with an RFP, what we're looking for is a VHF radio system and there are so many multitude of different ways to do it, you know. Nobody in--we have used examples of Passport and the other ones to come up with what we think is a reliable estimate to do the job, but we have not pitched on the final solution. On the exciter

Page 171

for Bay D'Espoir, it has to be, for instance, 237 volts and 17,000 amps or whatever it is, which I don't know the details offhand. But there's a lot more certainty about what we need at the end of the day for a backhoe or for an exciter than there is for the VHF.

Q. Well you already know you need a backhoe.

A. We know we need a backhoe, we know that it has to reach "X" number of feet or has rubber tires or whatever the case is. Those things are already defined.

Q. Mr. Dunne, do you want to correct Mr. Haynes?

MR. DUNNE:

A. Not really.

Q. The other type of category I had was two examples, one is B-39 and one is as good as the other, which is service extensions which I think is--I don't think that's in production, I think that's -

MR. HAYNES:

A. That's really TRO.

Q. That's outside your bailiwick, but if I could in B-39 you'll see--I don't want to ask you to support this project, I'll just -

A. I have a general idea of what B-39 is all

Page 172

about, but I don't know the specifics.

Q. And you'll see in the project description it says, "This project is an annual allotment based on past expenditures."

A. Which basically is that every year we have "X" number of service extensions, you know, if somebody builds a house or builds a subdivision, we have to obviously stick poles and design a distribution system to suit. And subject to correction by Mr. Reeves or Mr. Martin, I'm quite sure that's the answer. Based on past practice, every year we have this recurring expense.

Q. Sure, it's an historical expenditure. So we've got the exciter which is specific piece of equipment, but you still need to do engineering work on in order to get the full specifications of how that piece of equipment is going to be installed and so on, you've got B-16 which is the backhoe which is just the general idea of the equipment you need and then you're just looking for a tender to--an order to fulfil that. You've got B-71 which is the decision is pretty open ended about exactly what you're going to buy at the end of

Page 173

the day.
A. It's a system that we need to acquire to replace the current system.
Q. And then you've got project's life service extension which are just based on historical expenditures and that's what you figure you're going to end up having to spend this year with some escalation, if that's appropriate?
A. Yeah.
Q. Is there any other sort of you can think of conceptually, a capital project that Hydro would need to put forward in either this budget or other ones that you wouldn't be able to fit into one of those four categories neatly?
A. No, I don't think offhand there are any there from the point of view of category four on a cost basis, but we did have one a couple of years ago which you may remember was a reheater retubing in No. 3 Holyrood. We had a problem there and there was a payback overtime based on increased deficiency, so that would have justified on two reasons, one being the economics was there; secondly, it solved an operating problem that we had on the control

Page 174

of temperatures. But by and large, that covers most of the issues.
Q. Okay, I guess we can turn to the VHF project itself and I guess Mr. Dunne, you'll be the one handling some of those questions, although I think Mr. Dunphy might want to wade in on some parts as well. And the first thing I would like to start with if I could, Mr. O'Reilly, is the telecommunication plan. It's an attachment to NP-1. And I'm looking for page 15, Mr. O'Reilly. Now this is actually in the section dealing with, as you will see the east-west interconnection microwave radio systems, Mr. Downton, but it's a statement that's close to the bottom of the page, Mr. O'Reilly. There's no line numbers of this, but it's the last paragraph. I just wanted first to get you to confirm whether this statement applies generally, as it would seem to imply through that sentence, to your whole telecommunication plan or whether it's just in relation to this microwave radio system, but that the long-term objective is to reduce the Company's reliance on leased services and thus improve system availability and reduce

Page 175

operating costs?
(2:30 p.m.)
MR. DOWNTON:
A. That is a fair assessment, that's one of several objectives that were put forward with the telecommunication plan. I guess the most important objective of the telecommunication's plan was to put forward a plan that would look after the replacement of the obsolete technologies; in particular, Powerline Carrier and Microwave Infrastructure, VHF Infrastructure that we had in our system as of 1995, and that's where the telecommunication's plan grew from.
Q. If we could just go over to page 23 and this is in your actual VHF mobile radio section part of this telecommunication plan, and it's point No. 3. "Aliant is getting out of the mobile radio business and concentrating primarily on cellular. This technology is not a viable alternative for a generation and transmission utility." And I take it given generally the comments that you've made so far, Mr. Downton, while on the stand, that that's the position you still hold?

Page 176

A. Cellular is not a viable alternative?
Q. Well no, that Aliant is still getting out of the mobile radio business and concentrating primarily on cellular?
A. Yes.
Q. Okay, and if we go to the Business Case for the VHF Replacement Project and page 2, Mr. O'Reilly, the paragraph starting with "Ownership of the MRS", and about halfway through that there's a sentence that starts, "As an example, Aliant has reduced the coverage and service for its mobile telephone system as Cellular Telephony has eliminated most of the customer base and it has now sought permission from its regulator to discontinue this service completely. Ownership of the utilities, MRS, brings control of the critical piece of infrastructure required to operate and maintain the electrical grid of a major utility." So that's a one, two of Aliant's-- confirmation again that Aliant from your vantage point is no longer interested in maintaining a mobile radio system and that ownership of your communication systems, a

Page 177

policy based decision that this utility has made?
A. I guess with regards to the first sentence, it is still our understanding that Aliant is wanting to remove itself from "mobile radio business". I guess with regards to the last one, the ownership issue, as I indicated in the presentation, right now there does not exist an alternative but for Hydro to own its infrastructure; however, as I indicated when and if we go to tender, we will entertain a leasing option and evaluate it as such.
Q. Okay, but you currently have how many sites, repeater sites on the Island now?
A. Twenty-nine and approximately 26 are Aliant's. Are you talking for the mobile radio?
Q. Yes, for the VHF system.
A. Existing system.
Q. Yes, your existing VHF system, has 29 repeater sites?
A. Sites, that's correct.
Q. And 26 of them are owned by Aliant?
A. Yes.
Q. Three are owned by Hydro, plus the switch and the switch is owned right now, well maintained

Page 178

by Aliant, isn't it in the Gander property?
A. Gander central office, yes.
Q. Now, let's just presuppose for a moment that Hydro selects the Passport System and implements it as it would seem to be the current thinking about the way that that might take place, if you were to proceed that route, and you were to also move your sites as anticipated as well in conjunction with all of that, you would have a total of 35 sites, I think is the intention?
A. That is the intention.
Q. And how many would be owned by Aliant?
A. I believe I indicated 21 and Hydro would have 14.
Q. And there's no switch under that scenario, so we don't have to worry about that.
A. That's right.
Q. Okay, Work Services & Transportation, it is indicated in Hydro's discussions with Work Services it is hoped that Work Services participates in this project, both in a contribution towards the capital cost, as well as a contribution towards the ongoing operating and maintenance costs, correct?

Page 179

A. Yes, that is correct.
Q. And that Hydro's position is, and I believe this was in response to questions from counsel from Newfoundland Power in particular, that Hydro believes that a fair allotment of the cost between yourselves and Work Services & Transportation would be in the order of fifty/fifty?
A. That's correct.
Q. And is that generally the arrangement that you have with Work Services & Transportation under your existing arrangement with them?
A. Under the existing arrangement, it covers fifty/fifty on the operational costs.
Q. And we know the technology was put in 15 years ago, so--I don't know, are you aware of whether Work Services & Transportation participated in the capital cost of the existing system when it was installed 15 years ago?
A. No, basically the system from my recollection was installed in '88/'89 and I believe that Work Services came on in 1993.
Q. Okay. Would you anticipate that if Work Services & Transportation was to, as hoped,

Page 180

foot the bill for fifty percent of the capital cost of this project and agree to pay fifty percent of the operating and maintenance cost on an ongoing basis, that they would want to exercise some element of ownership or control over the system? Would you not anticipate that?
A. There has not been that indication to us. I guess what we would look at is providing an agreed upon level of service because at the end of the day they will, I guess, Hydro has the expertise, I guess, to manage it if at the end of the day it ends up as, well Hydro owned facilities, and we would provide a contractual level of service for the overall system.
Q. It seems odd though that if I'm willing to participate in fifty percent of the capital cost of a fairly expensive piece of equipment that I wouldn't want to exercise any ownership, control over it or put a tentacle in there somehow to make sure that this system is run and operated and maintained, added on, whatever, in accordance with my best interests, as well as Hydro's?
A. Yes, and the way I would see that being done

Page 181

is through a contractual service, well what I call service level agreement which would specify the level of service that I, as a user and owner of that, would expect to receive and also a process to look after any additions to the, or expansions to the system et cetera.

Q. So that's a speculative one, but at least we know that even under a scenario that Hydro is putting forward now that if you, at the end of the day, have 35 sites in the Province and 21 of them are still on Aliant sites, that you really still have a mix, don't you, of owned and leased?

A. Yes.

Q. And so while the stated corporate objective is to own this communication's system, in reality the ownership is still in a large measure with Aliant, isn't it, by virtue of the fact that most of your sites are on Aliant sites and you end up leasing back and entering into service agreements with Aliant?

A. Yes, that's correct.

Q. But as I understand it, Hydro does not want to become a common carrier, as it's known?

A. That is correct.

Page 182

Q. And could you just explain to the panel members what your understanding of a common carrier is?

A. I guess if Hydro were to be a common carrier, say for mobile communications, if say a fire department, say in Blaketown wants VHF mobile service and they approach Newfoundland and Labrador Hydro, then we are obligated to provide that service, as long as we have coverage in that area. So we cannot turn back anyone who comes to the table to ask for service if we can accommodate them within the designed parameters of the system. It's no different than Aliant providing telephone service. They cannot say no.

Q. And why does Hydro not want to be a common carrier?

A. Primarily that's not our core business. Our core business is not telecommunications, it's an integral part of supporting our core business infrastructure, as well, I guess one of the other aspects is we are not staffed for it and also, but more importantly, it brings a whole new regulatory regime that Industry Canada and CRTC that for what we would look

Page 183

at, would not make sense.

Q. You feel like you've had enough regulation, I take it?

A. I won't comment on that.

Q. The only thing is if you go to your telecommunication plan again, page 26, I think Mr. O'Reilly. In that paragraph starting with "Utilities that have made" -

A. Yes.

Q. And this is in a discussion cost summary project status and capital cost and then it's in your conclusion section, actually. And you go utilities have made an investment in high capacity and so on and so on. But it goes, the last sentence, "with a privately owned high capacity telecommunication network, band width is readily available for internal high speed data transfer or for the generation of additional revenue by leasing any excess band width to third parties."

A. And that option is not there unless we become a common carrier. I guess we -

Q. But it's expressed there as a, I take it, you know, from the statement that it's expressed that that might be something Hydro would do

Page 184

with a privately owned system, band width is readily available to yourself or for the additional generation of additional revenue for Hydro by selling this excess band width or leasing it out. So you're saying that that's not -

A. To enter into competition? Basically no, that has not even been considered and as far as I know will not be considered. When we looked at the microwave infrastructure expansion very early on in the process, we did have a meeting with Aliant and we basically laid out all our communication's plans and we told them definitively that we have no desire to enter into competition with Aliant. There are opportunities, yes, there are opportunities out there to generate additional revenue. Some of our sites we have Aliant cellular sites on, so we backhaul some T-1s for them to generate some additional revenue and in the case of the Bay D'Espoir system, they went and paid for the overbill cost, so we could provide--both parties could provide a cost-effective solution for both Hydro and Aliant services into the Bay D'Espoir area. But

Page 185

other than that, there is no other desire to enter into competition.

Q. Okay. Chair, that's a good place to take a break.

CHAIRMAN:

Q. Okay, Mr. Kennedy. We'll come back in fifteen minutes.

(BREAK AT 2:44 P.M.)

(3:00 p.m.)

CHAIRMAN:

Q. Okay, Mr. Kennedy.

MR. KENNEDY:

Q. Thank you, Chair, Commissioners. Mr. Downton, I wonder if we could just start with some really simple givens. Given is that Hydro's proposal at its absolute essence is it's seeking approval to replace its existing VHF system.

MR. DOWNTON:

A. That's correct.

Q. And the reason for this, is that it's fifteen-year-old technology. It's been manufacturer discontinued in certain aspects?

A. Yes.

Q. Your difficulty in acquiring spares in order

Page 186

to maintain that level of comfort on the system?

A. That's correct.

Q. And as I think it's been shown by your Appendix 8 in the business case that you're starting to experience some, what could be described as flaky performance on the switch itself?

A. That's correct.

Q. Just curiosity, can the switch be taken out of service in order to service it?

A. No.

Q. And so as far as the justification for the project goes, a replacement for the VHF system is needed because it's presently unreliable, it exposes your employees to safety issues, and also, it itself then creates potential reliability issues for your transmission or electrical generation system?

A. That's correct.

Q. Now so once the conclusion is reached that a replacement of VHF is warranted, based on those, it's a matter of then choosing the replacement, correct?

A. That's correct.

Page 187

Q. And would you agree with me that in choosing a replacement, really you have two things that you need to consider. There's business decisions that need to be made, and there's technology decisions that need to be made?

A. That's correct.

Q. And the business decisions would involve elements such as cost, partners and alliances, financing, and the like?

A. That's correct.

Q. For instance, the discussion we just had as to whether Hydro would be interested in becoming a common carrier would be a business decision, in relation to your communication systems?

A. Well, that's the decision that's already been made. Hydro would not become a common carrier for that.

Q. No, exactly, but the decision not to become a common carrier is not a technology decision. It's a business decision?

A. It's a business decision, that's correct.

Q. Okay. In regards to the technology decisions, I think Mr. Dunphy actually described that you need to do two things. He would derive a functional needs listing, if you will, and

Page 188

that ultimately, it has to be a reliable system, whatever you put in place.

MR. DUNPHY:

A. Yes, that's true.

Q. And in the technology decisions, would you agree that the three main things that would need to be considered are the type of technology that's ultimately employed, the supplier availability for the type of technology that is ultimately selected and then the support that is available in regards to that technology?

A. Those are three highly significant factors, yes.

Q. Now, as I think it was pointed out by Mr. Downton during one of his cross-examinations that Mr. Cook himself, in his report, and I believe you pointed out the passage which is at page 28 of his report, and specifically paragraph 11.3.1, that the technology, especially in this field, in this area, is advancing rapidly and with that, changing rapidly?

A. It is definitely changing rapidly. Some would question whether it's advancing, but it is

Page 189

changing.
Q. Two steps ahead and a step back at times. So given that, and sort of given my discussion with Mr. Haynes regarding the approach taken by Hydro in putting forward this B71 project, would it be reasonable to say that in projects like this, where you're looking to acquire new technology, and it's a significant size of a project, so of course the complexity of the project increases with the size, that it's a case of best thinking scenarios, as you move along in your decision making process?
A. I'm not quite clear on what you mean by that phase.
Q. The decision that you have at any given moment is based on your best thinking about the technology that's available at this moment and your analysis of the cost benefit that's derived from those technologies that are available?
A. Yes.
Q. And that different from a backhoe, where we can fix, relatively far ahead of time, the specification for that backhoe and then have with reasonable certainty that you're going to

Page 190

go to tender for a backhoe and that it's going to come in close to what you're looking for, but in the case of purchasing something technology related, it's more difficult for you to derive that definitive specification to be able to look too far down the road?
A. That's definitely true, I believe, in mobile radio systems in particular. As Mr. Cook indicated in his report, it's a very competitive arena and vendors and manufacturers often seem reluctant to discuss upcoming developments. So it is a very fluid area and difficult to ascertain what would be available in future.
Q. So in the case of Mr. Cook's report, seeing as we have it up there, he lists a number of things that Hydro was going to need to identify before it can go ahead with a--if I gathered correctly, before it can go ahead with a tender specification. I'm just wondering if you could indicate whether, in fact, Hydro has completed that, and I see they're all on page 29, for the most part. The first one there at the top of that page is actually continued on from 28, but it involves

Page 191

Industry Canada and whether if--it says "further discussion will be completed with Industry Canada in the event Newfoundland Power wishes to become a joint owner of the NLH mobile radio system," and I'll come back to that in a moment. The next one though, 11.3.8 says "it's necessary to identify Newfoundland and Labrador Hydro's data requirements from a data infrastructure requirement." So is that being completed?
A. I wouldn't say it's definitively completed. We've conducted preliminary discussions with our users to indicate what they foresee to be future data requirements. We've also discussed, with several of the manufacturers that we've contacted, the ability of their systems to handle data, but in terms of specific identification of data requirements, it has not been completed at this time.
Q. Okay. Because it says that the--if I gather correctly, the next sentence says "if a complete current mobile data assessment of needs applications is not fully identified now, particularly for band width requirements, a separate radio system may be required or

Page 192

added later, since data rates are alternative dependent." So would this be sort of like a condition precedent to your ultimately going out with a tender, you would need to complete this aspect of the project?
MR. DOWNTON:
A. Yes, that's correct.
Q. In the case of 11.3.9, "the requirement for status messaging is significant in the long term. These requirements should be attained from radio users and so on." Has that been completed?
A. Again, I guess further to what Mr. Dunphy said, we've talked to our users and Mr. McDonald in particular, about some of his requirements. We have done an initial review with Hydro's users and that will have to be refreshed again, and we've also visited other users who basically have data on board and looked at their applications. So it has started, but it has to be completed.
Q. Okay. 11.3.10, "radio coverage predictions should be completed prior to preparation and specification." Has that been completed?
MR. DUNPHY:

Page 193

A. Preliminary radio coverage predications have been performed.
Q. Okay. So once Hydro decided that it needed to replace the VHF system and then in addressing its technology decision making, I just wanted to make sure I understood the available technologies and what exactly was canvassed, and if I gather correctly from the examinations to date, that we can really talk about two different systems, a conventional system and an LTR system?
A. Really what we found in our analysis is that a trunking system of some sort would be the best fit.
Q. Before you determine whether it's the best fit, you have to look at all the available technologies that are at least a possible fit?
A. Yes.
Q. And conventional is a possible fit?
A. Yes.
Q. And LTR is a possible fit?
A. A version of LTR is a possible fit, yes.
Q. And so let's just talk about that, when we talk about versions of LTR, and I had three different scenarios under the LTR. I had LTR

Page 194

without a switch, LTR with a switch, and then LTR with the Passport add-on.
A. I don't profess to be an expert in LTR, but I will relate my understanding. LTR was originally developed as a trunking protocol for very small systems. It's commonly used in single-site systems. There have been -
Q. Just if I could interrupt, that would be for instance a taxi stand?
A. Exactly. A taxi stand or a small trucking company. The LTR that Mr. Cook refers to in his report is actually LTR Net, which is a--as I understand it, it's a extension of LTR for multiple site systems, and really, from what I can glean from Passport, it is much the same thing. It's an extension of LTR that allows you to use LTR in multiple site systems and also adds additional functionality, which LTR does not require or does not have. For instance, LTR radios apparently are quite easily cloned, so that a stolen radio can be added to an LTR network quite easily and never discovered.
Q. Sure, okay. So there's a number of elements, but I just wonder, in the case of an LTR

Page 195

system without a switch, so the single repeater, as you--or single site antenna, you have one repeater and if you have multiple channel capabilities, you have the ability to have top groups off of that one repeater and that's basically what that system will enable?
A. I think so, yes.
Q. If we put a switch in the mix, which is kin to the system that currently exists, you have the ability for remote-to-remote talking. So two users hanging off separate repeaters, but it still requires the user to key in, in order for--and they would have to know where the other person is for them to be able to go from repeater to repeater, correct?
A. I believe that's correct, yes.
Q. So if I'm up in Carmanville and I want to speak with somebody that's down in Port aux Basques, I have to know that they're down in Port aux Basques?
A. Yes.
Q. And then I would have to punch in the code in order to access the repeater that's down in Port aux Basques in order to speak to them?
A. Yes.

Page 196

(3:15 p.m.)
Q. Okay.
A. And I believe, hope that they would have registered with the Port aux Basques site so that they are recognized by the LTR system.
Q. Right. The Passport, which is, if I understand correctly, an add-on technology to LTR?
A. I would define it as an enhancement to LTR.
Q. Right. And it allows remote-to-remote communications. So again, if I'm up in Carmanville and I want to speak with someone down in Labrador or down in Port aux Basques, then I can do that, but it doesn't require me to key in any special codes?
A. No. All it requires you to know is the number assigned to the other user's radio.
Q. And there's no need for a switch?
A. No.
Q. Under Passport?
A. No, there is no need for a central switch.
Q. And because of that, it allows for this distributed architecture that you described?
A. Yes.
Q. Okay. Now one of the things that Mr. Cook

Page 197

looked at in his Business Case for the mobile radio system was the difference between using an open standard system versus a proprietary system.

A. Yes.

Q. And just so we're clear, proprietary system meaning that there is a technology that is owned by that one company that unless they've allowed other companies to use, only they can produce equipment and systems that work on that technology?

A. Yes.

Q. Open standards would be something that allows multiple manufacturers to produce equipment that uses that standard and so therefore, it's multi-vendor supported?

A. Yes.

Q. And that one of the things Mr. Cook looked at when looking at that issue is he recommends, where possible, to use open standards?

A. Yes.

Q. He critiques the existing system in that it uses a proprietary switch, your existing system?

A. Well, I don't recall the exact phrase, but

Page 198

I'll take your word for it, yes.

Q. He sees that as a weakness inherent in your existing system in that you're locked in to one vendor to supply that one switch, correct?

A. Yes.

Q. Okay. And that, as I understand it, at least, is why--one of the reasons why he recommends the Zetron system?

A. I believe he actually recommends the EF Johnson system.

Q. EF Johnson, sorry.

A. Yes.

Q. Now the Passport system that Hydro's considering -

A. Yes.

Q. - if I understood you correctly, you indicated that Motorola, as one supplier, would be able to provide everything that's required in order for you to run the system? To have a fully integrated mobile radio system in the province, Motorola can provide the radios, the repeaters and through some sort of resale agreement, the controller?

A. Yes.

Q. As I believe has been ascertained by Mr.

Page 199

Hutchings in the (unintelligible - coughing) yourself, the controller is actually produced and normally sold by a company called Trident Microsystems?

A. Yes.

Q. Now that controller is proprietary technology, isn't it?

A. The Passport protocol is licensed to multiple manufacturers. Right now Trident is the only manufacturer that makes the switch, but they do license the protocol too. Right now, I believe they have five radio manufacturers.

Q. You say switch, I find that raises a great deal of confusion because we just ascertained that the Passport doesn't need a switch, but I appreciate that, in your view, you look at still as if it is a switch. But -

A. Yes, and functionally, it is a switch.

Q. Acting like a switch, but can you call it a controller instead, just so we're clear on what we're speaking about?

A. We can call it a controller.

Q. So the controller is made by Trident Microsystems?

A. Yes.

Page 200

Q. And in this case, they have the ability to-- Motorola has the ability to resell that Trident controller?

A. Yes.

Q. But ultimately, that controller is proprietary?

A. No, the standard is -

Q. The technology is owned by Trident?

A. The standard is licensed by Trident to other manufacturers.

Q. Okay. There are a number of Passport licensees?

A. Yes, I believe there are five that I know of.

Q. I have nine, so you indicated that there was one other one that you dealt with? That you-- I believe in a question you said you spoke to other suppliers besides Motorola?

A. We did speak to other suppliers besides Motorola, but not about Passport.

Q. Okay. So have you spoken to anyone else besides Motorola about the Passport system yet?

A. No.

Q. Would it be your intention to do so?

A. If -

Page 201

MR. DOWNTON:
A. Through the tender process.
MR. DUNPHY:
A. Well, if we write a functional specification, we'll entertain any responses that come along.
Q. Sure. You indicated that Motorola was one of the largest mobile radio manufacturing companies in the world.
A. Yes.
Q. That would give you a certain level of comfort when deciding who to purchase from, presumably?
A. Yes.
Q. Can you tell me who the agent is for Motorola here in the province?
A. Aliant Telecom is one agent for Motorola. I'm not certain that they're exclusive, but I know they are an agent for Motorola.
Q. Okay. So if Aliant--if Hydro ended up selecting the Passport system and ended up contracting with Motorola in order to acquire it, would it be--would you expect it to be order fulfilled, if you will, through Aliant, as Motorola's agent here in the province?
A. Well -

Page 202

MR. DOWNTON:
A. It would probably go a little bit different route because Motorola typically doesn't bid direct. So if we went to tender, what would happen--I shouldn't say if we went to tender--when we go to tender, what you may find is Aliant will bid the product and then you're probably maybe end up with a company in Nova Scotia bidding the product and et cetera, et cetera, so you may end up, at the end of the day, with say ten bids. You may end up with three bids of Passport, all by different suppliers, even though they're actually supplying the same equipment.
Q. Okay. Because the oddity, of course, is that, you know, you're indicating in some aspects that Aliant's getting out of the mobile radio business and this is making Hydro apprehensive and in keeping with your corporate policy, you'd just as soon own that system yourself, but yet still a large portion of the sites are going to be Aliant run and Aliant owned, and if you end up going with a Passport system, chances are you're going to be joined even more to the hip to Aliant, as being the

Page 203

supplier of the Motorola system.
A. I guess the statement that Aliant are getting out of the mobile radio business is a reflection on the fact that for a number of years, they basically pursued province-wide, to provide a province-wide system, and they internally even have their own mobile radio infrastructure, and I guess what they have done over the last say three to five years, in particular, is withdrawn from that market, especially upon loss of the RCMP/RNC system. And in discussions with their vice-presidents, et cetera, what they basically find is to invest--for them to invest directly into a mobile radio infrastructure, there's not enough users on the island to do that for a province-wide system. They would rather invest it in cell technology, because there's a better return on investment for them.
Q. As indicated, under one of your scenarios with the additional six sites to bring your total to thirty-five and that twenty-one of them would be Aliant and the remaining fourteen would be Hydro owned sites, was there any thought given to contracting with anyone else,

Page 204

besides Aliant and Hydro, to access repeater locations? I have it on good authority that, for instance, CBC has a total of ninety-seven sites in the province. Can I ask you why that wasn't considered or why you have no arrangements with CBC?
A. We really, I guess from the past, I guess even before my time, when the system was installed, Terra Nova Tel got the contract and, of course, that was subsequently passed to Aliant and that's why the repeater equipment ended up where it did, at Aliant sites. We've had discussions with the RCMP. So as much as we've defined the approximate locations for these sites, we will investigate others to reduce our costs, especially if it can provide better coverage, and that's one of the big issues is basically picking the sites that will provide at least the same level of coverage that we have now.
Q. It just seems that if you've got, as I think you stated, that staying at Aliant sites is getting more costly?
A. Yes.
Q. That you would want to consider other sites

Page 205

besides Aliant sites?
A. Yes, we will be considering other sites.
Q. Okay. It's just I don't see any reference to that anywhere in any documentation about -
A. No, I guess we've had just preliminary discussions with the RCMP, even say a month or so ago, and we basically will be--we've had several meetings and they're interested in pursuing having accommodation at some of our sites and basically having the ability to reciprocate on their behalf.
MR. DUNPHY:
A. Of course, Mr. Kennedy, we've also been contacted by CBC to see if we're interested in buying any of their sites.
Q. Do either of you, Mr. Downton or Mr. Dunphy, are either of you aware of Newfoundland Power's current VHF system, in a technical way? For instance, do you know what Newfoundland Power's current coverage area is?
MR. DOWNTON:
A. All I can speak to is that I've seen it in one of their VHF mobile radio booklets, and I do have a listing, and I think in the consultant's report is a listing of

Page 206

Newfoundland Power's sites, and Mr. Cook, and Mr. Dunphy can probably speak better to this, but Mr. Cook did have meetings with Newfoundland Power to discuss, I guess, possibility when and if it's a viable option to maybe put one system in for two.
Q. Okay. And Mr. Cook does make reference to Newfoundland Power. I think I'd mentioned just when I was asking a question earlier about what was completed and what wasn't, that there was reference to the fact that there may need to be discussions with Industry Canada in the event that Newfoundland Power was to participate by way of ownership in the project, but just from a technical perspective, when Hydro is conducting its review of what kind of system to replace the existing VHF radio communication with, I'm trying to ascertain what, if any, information Hydro secured from Newfoundland Power in order to take that into account in this design, and I'm wondering, did you get detailed information about Newfoundland Power's current VHF system, for instance?
MR. DUNPHY:

Page 207

A. We have obtained information on Newfoundland Power's VHF system, and the indications that we have is that there is a possibility that the system could be expanded to -
Q. This system, whatever new system you purchase, you mean?
A. Yes, that we will have sufficient expansion capability to bring Newfoundland Power on, if and when that's a viable alternative.
Q. Okay. So that sufficient expansion from Hydro's perspective, right, that the equipment itself, I mean, for instance, you described the Passport system as having a virtually unlimited number of expansion capability?
A. It's huge. I can't remember the exact number.
Q. And so from a technical perspective, in that sense, there's nothing limiting more users using the system?
A. Right.
Q. But do you, right now, have detailed information about Newfoundland Power's current VHF system, for instance, the coverage area that they require?
A. I do not right now, no.
Q. Do you have a list of the owned and leased

Page 208

Newfoundland Power repeater sites in the province?
A. I believe Hydro may have that information. I don't remember--I don't have that information.
Q. Okay. Do you have a list of the number of radios and their locations used by Newfoundland Power employees?
A. Not personally, no.
Q. And do you know anything about Newfoundland Power's paging requirements?
A. No.
Q. Do you know whether Newfoundland Power has a planned life cycle replacement of its VHF system?
MR. DOWNTON:
A. My indication, and this comes through Mr. Reeves, is that it was indicated by Newfoundland Power that they are looking at at least another five years life in their existing mobile radio system.
Q. Is that, could we say, sort of a verbal-to-verbal communication that someone had concerning it, or do you have that in a written form with a clear representation by Newfoundland Power of that fact?

Page 209

A. Well, I can't speak to it. I've talked to Mr. Reeves, but whether it's in writing or not, I don't know.

GREENE, Q.C.:

Q. The only thing that would be in writing was produced during the 2001 General Rate Application where minutes of meetings and joint coordination were placed on the record and one of the items discussed was a joint VHF radio project.

HUTCHINGS, Q.C.:

Q. So from either of your perspectives, Mr. Downton or Mr. Dunphy, is there any technical impediment to Newfoundland Power being able to use this system?

MR. DUNPHY:

A. Not that I'm aware of.

(3:30 p.m.)

Q. Do you know if there's any legal impediment, and I ask that not from a utility perspective, but more from a perspective of the CRTC regulations, in so far as you know them, about being tripped up on common carrier status, for instance, or the like, for Newfoundland Power to add in to this system in five years time,

Page 210

for instance?

MR. DOWNTON:

A. My understanding is that there is not. I guess, our interpretation of the CRTC and Industry Canada ruling is that Hydro would not be able to entertain Newfoundland Power as just an ordinary user and charge a fee for service. Basically, Newfoundland Power would have to "buy in" to the expansion of the infrastructure and be, well say if you want to call it a partner.

Q. And I guess, presumably they would at some point need to buy in to the existing capital costs, whatever its book value is at that point?

A. I would expect so.

Q. And I guess if you've already Works Services and Transportation having cost shared into your system prior to that, that's going to complicate matters, isn't it?

A. Well, hopefully it'll make everything cheaper for everyone.

Q. Do you know if there's any corporate policy or contractual arrangements that Newfoundland Power has which would prevent it from

Page 211

eventually cost sharing in this system with Newfoundland Hydro?

A. Not that I'm aware of.

Q. In regards to your discussions with Works Services and Transportation, just a couple of questions, but one oddity first. Mr. Cook, in his report, at page 28, at 11.3.6, makes mention of--he talks about "continued shared use with WS & T since gross should not change, except for the addition of approximately one hundred radios currently used for simplex operation only, as identified by Works Services and Transportation in a meeting with Newfoundland Hydro dated, and to be confirmed with a follow-up letter to the meeting." So those one hundred radios that he refers to there, are they in excess of the one hundred-- or in excess of the radios that was indicated that Works Services and Transportation are already using?

A. Yes, they are. So if, I guess, right now, as indicated here, they operate in a simplex operation and if, I guess, Works Services deems that they want to bring those hundred radios on, then that would change the

Page 212

percentage.

Q. So you're no longer fifty-fifty then?

A. No, that's right.

Q. And would that then change your pitch for the mix on shared capital costs and shared O&M?

A. Yes, it most certainly would.

Q. That's what you're arguing is the basis, forms the basis for the arrangement?

A. Yes.

Q. And that would be a hundred on top of -

A. About seven. Well, basically seven hundred overall. So that would make it eight, so you'd end up with say four-fifty.

Q. Versus three-fifty?

A. Versus three-fifty, so you're looking at probably a--anyway, I won't do the math.

Q. Okay.

A. Sixty-forty mix maybe.

Q. So that's about fifty-six percent then?

A. Yes.

Q. When does Hydro see themselves moving ahead with obtaining a binding agreement with Works Services and Transportation?

A. I guess when we get release to move forward with this particular project.

Page 213

Q. Okay. So the Board approval is a condition precedent to your being able to go seek binding agreement with Works Services and Transportation?
A. Well, from my perspective, I see it as a natural progression to do that.
Q. Is there a reason why you wouldn't flip it around the other way, seek and obtain a written commitment from Works Services and Transportation that they'd cost share in this project on a certain basis, contingent on ultimately getting the Board approval?
A. I guess we've had discussions with Works Services and we've basically given, I guess, the preliminary budget numbers and, as I indicated there, working through their system with that, but I guess, until we have or there is a product to definitively offer, then basically it's difficult for them to also seek funding.
MR. HAYNES:
A. If I could, I think as we said before, is that if Works Services and Transportation were not a part of this particular exercise, we would still be proposing a practically identical

Page 214

Capital Budget proposal. So it is a win-win, and we need approval to proceed, and then obviously there'll be a fair bit of time dedicated to negotiating an appropriate arrangement with Works Services and Transportation. But if they weren't there, we'd still have to act.
Q. And can I ask you, when Hydro sees moving ahead with earnest discussions with Newfoundland Power about its participation in your new mobile communication system?
MR. DOWNTON:
A. I guess Mr. Dunphy has already had some initial discussions six weeks ago with Mr. Casey.
MR. DUNPHY:
A. Earlier this spring, the topic was brought up in a meeting. Mr. Casey indicated that they are quite satisfied with their system right now and have no plans to change it, but--and when the time comes, they will certainly enter into negotiation, enter into discussions then to see if it's a practical thing to do.
MR. DOWNTON:
A. But with that said, as Mr. Cook indicated in

Page 215

the consultant's report, that is something that we would get put to bed, so to speak, before we move along. So we would confirm with Newfoundland Power their requirements, their desires and then move forward.
Q. Mention is made of CF(L)CO in some aspects of your Business Case. Do I understand correctly that CF(L)CO is already using a Passport system in Labrador?
A. Basically, they're not really--shouldn't say it's a system.
Q. Are they using a Passport standard mobile communication?
A. We installed for Churchill a single-site Passport repeater for them to have communications within the town site and airport area, but it's a single repeater system and it's their system.
MR. HAYNES:
A. I would add, they have another separate system that covers their operating footprint in Labrador, separate from the system that's put in for town services.
Q. Let's switch out now to just a couple of questions on B59 and B60, which are the

Page 216

corporate applications and the application enhancements. Mr. Haynes, or Mr. Downton, I think you were the one answering a lot of these questions. Can you tell me, is there currently in place in Hydro an incentive program that encourages people to find lower cost solutions when choosing technologies for your corporate applications and application enhancements?
MR. DOWNTON:
A. Is there an incentive program? I guess -
Q. Do I, as an engineer or an IT professional, whether it's someone down in the trenches or someone at a manager level behind a desk or what have you, have some motivation to find lower cost solutions to put in place in your application environment?
MR. HAYNES:
A. There is no formal incentive program for most of the employees. There's a very, very limited incentive program in Hydro or performance program in Hydro. Basically, they're expected to do the work. They have to review this exercise, but there's no personal reward for doing their job, other than a

Page 217

paycheque obviously, although some tell us -
MR. DOWNTON:
A. I was waiting to answer that. But seriously, when we go through the different applications, we have people who do a lot of research, and do a lot of research on their own, and as part of going through any upgrades or any applications, we look at different solutions. We are not tied necessarily to any traditional solutions.
Q. Do you use Unix now on your 400?
A. No, basically, the only Unix server that we have now is what I call a data mart that basically is used to process the data from the energy management system.
Q. Are you employing any Lunix operating systems in the Hydro environment at all?
A. Yes, but I can't tell you about it.
Q. You don't know whether you do or not.
A. We are. Basically, in my understanding, we are employing Lunix operating systems in our intrusion detection systems.
Q. Your web server, do you know what that runs on?
A. No, but I can -

Page 218

Q. Do you know if you're using Apache or are you using proprietary technology?
A. I think--I won't say. I'll get an answer.
Q. Could you let me know that? (UNDERTAKING)
A. Yes.
Q. The work that you intend to do on your web site as is indicated in your projects there, could you tell me what the specific objective is with your web site that you want to achieve with this work?
A. Well, I guess we have some security issues with regards to the web site. The other aspect of the current design of the web site, it requires, we'll say, an IT professional to make changes to the web site. And what we've done with our intranet is provide a common set of tools so that, say, HR for their intranet site, they can go and manage their own content. And then the intent basically for the internet site is for the corporate communications department who would own that web site to manage that content themselves.
Q. Does Hydro out source any of its IT requirements at the present moment, other than a consultant base, and advising you as to what

Page 219

technologies to select, but do you employ what's actually being called utility computing where you purchase on a needed basis computing services, whether it's for data storage or actual data crunching?
A. No.
Q. Do you capitalize all your software licensing fees at present?
A. No.
Q. Do you expense those?
A. Basically -
Q. Expense them as in an operating expense, I mean.
A. Yes.
Q. So, your Microsoft software licensing fees, for instance, that you pay.
A. Our desktop licensing fees are expenses. Our server operating system licenses are capitalized.
Q. Okay. That's all the question I have, Chair, thank you, gentlemen.
CHAIRMAN:
Q. Thank you, Mr. Kennedy. Ms. Greene, are you ready to re-direct?
RE-DIRECT BY MAUREEN GREENE, Q.C.

Page 220

GREENE, Q.C.:
Q. Yes, thank you, Mr. Chair. I only have just a few. The first question on re-direct is for either Mr. Downton or Mr. Dunphy and it arises from the cross-examination by Mr. Alteen and it related to the issue of the internal costs associated with project B71 which is the mobile replacement system that they've talked a fair bit about. The first question with respect to internal costs arising from that cross-examination is the discussion about whether internal costs would be consistent with respect to whether either a conventional or a trunked radio system was selected. And I wonder, Mr. Downton, if you could comment on that again, please, because in reading the transcript, Mr. Alteen expressed his confusion at the end of the answer, so I wondered if you could explain from Hydro's perspective as to why the internal costs would be consistent with respect to whichever, conventional or trunked radio, is actually selected and installed.
MR. DOWNTON:
A. With regards to Hydro's internal costs, we did

Page 221

use the same costs against all of the alternatives and the reason we did that is because whichever technology we select, whichever system we select, would be a new system. So, with regards to training, parts, project management, engineering, all of those would have, in our opinion, the same value across all of the systems, we would be looking.

Q. The other thing, if you could look at page B71 and give the breakdown of the internal cost that was just over 3 million dollars.

(3:45 p.m.)

A. Now, the category at the bottom called "corporate overheads", the overhead at 6 percent is approximately $450,000.00; contingency at 10 percent is $687,000.00; escalation at approximately 1.8 percent is $440,000.00 and the funds used during construction is approximately $400,000.00. That would give you approximately 1.9 million dollars.

Q. Now, what is the balance then of the other million for the 3 million cost over an above the 5.7 million direct cost that was used in

Page 222

the Business Case analysis.

A. This cost would be used for internal project management, installation and training.

Q. And you would find those in the categories above, material, supply, labour and engineering, is the correct?

A. That is correct.

Q. The next item arises also from Mr. Alteen cross-examination and it's a reference to Appendix C which was a consultant's report and attachment four. And I have here a document to distribute, I'd like to distribute at this time and ask Mr. Dunphy to briefly speak to it.

MR. DUNPHY:

A. Yes, Mr. Alteen -

Q. If you could wait Mr. Dunphy until everyone has a copy.

A. My apologies.

Q. Thank you. Mr. Dunphy, I believe in his cross-examination, Mr. Alteen indicate that some of the number appear to be incorrect. Did you have the opportunity to review that and was Mr. Alteen correct?

A. Yes, he was.

Page 223

Q. Could you explain what the error was on what we have just circulated?

A. The error was that the person who entered the data, somehow managed to transcribe some of the results. If you compare Appendix four in the original document to the attached table, you can see that the totals for August, in the original document are identical for the totals for September.

Q. So, the numbers were transposed or repeated?

A. No, they weren't transposed, they were actually moved down because if you compare the corrected document, the numbers for September actually appear in October in the original; the numbers for October appear in November, et cetera. It appears to be a cut and paste mistake in the original spreadsheet.

Q. And there was no substantive decision that turned on that, was there?

A. Absolutely not.

Q. I guess we need to mark -

MR. KENNEDY:

Q. Well, actually, Chair, I don't think we need to put that in as an exhibit because it's a revision of an existing document and marked as

Page 224

such, so.

GREENE, Q.C.:

Q. Okay.

CHAIRMAN:

Q. Just one question on that while you're there, you have two Julys there. Does that appear as well on the--there's a reason for that, is there?

GREENE, Q.C.:

Q. And I'll ask Mr. Dunphy to speak to that. Sometimes I wish we did have two months of July.

CHAIRMAN:

Q. I hope the second one is warmer than this one.

GREENE, Q.C.:

Q. And one less month of February. Mr. Dunphy?

MR. DUNPHY:

A. Just to avoid further confusion, it was decided, not by myself I might add, to include two months of July to be consistent.

Q. Just because it was in the previous report without a mistake and the numbers -

CHAIRMAN:

Q. Yes, I noticed it in the previous report.

GREENE, Q.C.:

Page 225

Q. But there was no mistake in the numbers, I gather. The next question then arising in re-direct is for Mr. Haynes and it arises from the cross-examination by Ms. Andrews and in relates to B8, the gate hoist at Ebbe. In a response to a question, Mr. Haynes, you indicated that Hydro had not done an evaluation of continuing with maintenance of the current system or an analysis of new and improved screw mechanism system and I wonder if you could advise the Board why Hydro did not do that particular type of analysis.

MR. HAYNES:

Q. I guess I implied at that particular time it was about a 50/50 ratio of gates between screw stem and so on. Really, the big governing factor is the weight of the gate. Those particular gates at Ebbe are the bigger ones that we have in the Hydro system are approximately four by six or seven meters and they're steel gates. And we do have screw stem gates on smaller gates and they do operate satisfactorily with very little maintenance and very little concerns. These particular gates, the mode of operation

Page 226

changed when Upper Salmon went in. Prior to that, they were either opened or closed. Now they go partial operation. In the engineering judgment that's based from generation to engineering operations personnel is that the continuing of screw stem, particularly for gate number 2 is really not a satisfactory and reliable way to continue operation on that particular gate. As well, all the operating mechanisms are 35 years old, the gear boxes and so. And the most prudent thing from their point of view for long term to sustain reliability is to go with a more traditional hoist mechanism for that weight of a gate, particularly for it's partial gate operation requirements. I think there was one other thing which I should add, I guess, I inferred or implied that these gates, number 1 and 3 are only used for flooding handling; that's really not correct at all. The amount of water that you gets through a gate depends obviously on how open the gate is. It also depends on how much water is up stream. And when we're in low water conditions or when there's an unexpected increase in demand at

Page 227

the plant which does happen often, basically we will employ 3 gates, but number 2 is a very, very high percentage of the time. Gates 1 and 3 are often used yearly. I won't say daily, but they're certainly used many times a year to increase the discharge of water and also obviously for flood handling.

Q. With respect to there answered, is it--the way I understood your answer is that the alternatives proposed by Ms. Andrews were not acceptable to Hydro from a reliability perspective as a satisfactory solution, therefore they weren't costed. Is that a fair -

A. That's fair and we're trying to be proactive to ensure the long term reliability and the degree of liability that we need for those particular gates, I guess, experience has shown that the screw stem gates are not providing that. I should add as well--I'm not sure if I mentioned it before, but the failure in, the last failure was five months to acquire, you know, re-engineered or new parts for that gate. That's too long a time frame.

Q. The last question arising from Ms. Andrews

Page 228

cross-examination related to the replacement of the exciter on Unit number 7 on Bay D'Espoir and the question was whether any of the cards that have been removed from the exciters in the first six units could be reused in Unit number 7?

A. No cards are interchangeable with Unit number 7.

Q. The last two questions really aren't re-direct, Mr. Chair, but I believe we're in a position to answer the two undertakings to Mr. Hutchings given earlier in the afternoon if that's satisfactory at this time.

The first one that I had noted related to the Citrix servers and I believe one undertaking was with respect to the number of Citrix servers that we have, Mr. Downton. Have you been able to confirm that over the break?

MR. DOWNTON:

A. There's one server.

CHAIRMAN:

Q. Would you spell that, Mr. Downton, for us, what it is that Mr. Greene is trying to say, so we'll all know what it is.

Page 229

A. One Citrix, C-I-T-R-I-X server.
GREENE, Q.C.:
Q. And also arising from the same question on the Citrix servers, I believe, in response to a question of Mr. Hutchings, you indicated that that server is required only for the Neoware product of the Thin Client product, was that correct?
A. No, that's not correct.
Q. What is the correct answer to that?
A. The way that we are designing the infrastructure is that all devices, end user devices would go through the Citrix servers. And I should know that because I have a laptop that works in Thin Client mode on my desk. So, basically whether it's a laptop, desktop or a Neoware box, they all go through the Citrix server. So, that basically means that the costs are allocated across all of the units. So, if you want to do a per unit cost basis, you can add approximately $1,250.00 to the cost of the desktop unit, to the laptop unit and to the Thin Client, Neoware unit.
Q. And the last question arising as an undertaking to Mr. Hutchings this afternoon

Page 230

was he wished you to review the all up costs, I'll call it, of the Thin Client device. Now that you have corrected the information on the Citrix server, have you been able to--will you confirm please, the cost of the Thin Client?
A. Well, if I take the Thin Client number I gave Mr. Hutchings this morning which was $1,200.00 and I add $1,250.00 as I just mentioned, that would be $2,450.00 per unit.
Q. And the cost again, I'm sorry, I missed that, of the -
A. Sorry, $2,450.00.
Q. That completes not only my redirect, but the few undertakings from today. I believe we have outstanding, two other undertakings and my note just passed and I should have remember, we have a table also that I needed to present in response in re-direct.
CHAIRMAN:
Q. You want to do that now?
GREENE, Q.C.:
Q. Yes because I hope that will conclude the--it is redirect for the panel. Again, it's in response to a question arising from Ms. Henley Andrews yesterday with respect to the removal

Page 231

of the exciter for Bay D'Espoir and what impact the removal of the 150 megawatts of capacity would have with respect to table 8 that was filed in the GRA. So, thank you for reminding me. It must be getting late in the day and as I get older, my memory starts to fail me during the day. These are copies of the table I had intended to produce.
CHAIRMAN:
Q. Thank you. Did you say that was in response to an undertaking?
GREENE, Q.C.:
Q. Cross-examination of Ms. Andrews to Mr. Haynes with respect to what impact the removal of 150 megawatts of capacity -
CHAIRMAN:
Q. I remember that, but is it in response to a numbered undertaking?
GREENE, Q.C.:
Q. Oh no, no sir, it's not.
CHAIRMAN:
Q. So, we have to mark it, I guess, Mr. Kennedy.
MR. KENNEDY:
Q. Yes, we would, exhibit number 2. Actually, while we're on that, counsel for Hydro, you

Page 232

filed this list of the equipment to be removed from service just a minute ago.
GREENE, Q.C.:
Q. No, I have not filed that.
MR. KENNEDY:
Q. Okay.
GREENE, Q.C.:
Q. I have not spoken to that, Mr. Kennedy.
MR. KENNEDY:
Q. I beg your pardon, okay.
GREENE, Q.C.:
Q. Mr. Haynes, could you please indicate now that the table has been circulated, what this table, revised table they chose.
A. Well, first of all, this does not respect any energy balance, it's strictly on the loss of, as we discussed yesterday, if there was 150 megawatts removed from the system for one year, I guess the inference was made that we have lots of capacity to get through and it's not a problem. Our objective, I guess, is that we when we get to NLLH (phonetic) of 2.2 hours per year, that we would actually consider new generation sources whether purchase or build or whatever. And talking

Page 233

150 megawatts out of the system basically would change the previous number from--sorry, I don't have it, but it's in the GRA from the original schedule 2, it will actually increase to 12.1 which is well beyond our criteria. And with our load growth, 150 megawatts is quite a substantial amount of our capacity.

Q. So, the removal of the 150 megawatts of capacity would cause a problem immediately with respect to loss of load criteria that's been approved by the Board.

A. It's a big deal and we don't have any options obviously for emergency purchase contracts from, say, Hydro Quebec or Labrador, whomever.

Q. The last thing that Mr. Kennedy has referred to, I didn't plan to ask--sorry.

CHAIRMAN:

Q. Just wanted to clarify, this table 8 comes from -

GREENE, Q.C.:

Q. It's actually in the 2003 Hydro GRA.

CHAIRMAN:

Q. In the GRA, that's right. I just wanted to make sure the record showed that because it's not table 8 from your Application for the 04

Page 234

budget.

GREENE, Q.C.:

Q. No, it's not. It's a revised table 8 to reflect that one question of the impact of the removal of 150 megawatts of capacity from Bay D'Espoir.

MR. HAYNES:

A. The original number was actually 0.6 and then it went to 12.1 and our criteria is 2.8.

GREENE, Q.C.:

Q. The last thing I had to circulate, but had not planned to ask the witnesses on as it's just a simple reply to an undertaking is the list of locations of the printers. So, I have that and I can leave that with the parties or give it out now.

MR. KENNEDY:

Q. So, that would be U Hydro No. 20.

GREENE, Q.C.:

Q. And that, thank you, Mr. Chairman, concludes my re-direct and response to undertakings. We still have one undertaking outstanding, if my record, which is Mr. Kennedy's for the web server technology.

CHAIRMAN:

Page 235

Q. Okay. Just to--it's 4:00 and we're done for the day. I just want to be sure where we go tomorrow morning. There will be an opportunity for the Board to ask questions, but before that, and realizing that some of the information that Ms. Greene just filed is in response to Mr. Hutchings and Ms. Henley Andrews queries, you may wish to have a look at that and see if there are any questions you have in the morning as well as Mr. Kennedy, I suppose. Were you involved in any of those, Mr. Hayes?

MR. HAYES:

Q. Sorry, I missed the point.

CHAIRMAN:

Q. I know, it's 4:00. The information just given by Ms. Greene, I was saying that anyone who was involved in those questions may want to have an opportunity in the morning to ask any questions of clarification of the witnesses.

MR. HAYES:

Q. Well, there were only one or two questions related to Mr. Alteen -

CHAIRMAN:

Q. So, that opportunity will be extended tomorrow

Page 236

morning in the usual order of things and following that, there may be some questions that the Board members have and there will be an opportunity for questions arising and then I think we'll be able to discharge the panel.

GREENE, Q.C.:

Q. Mr. Chairman, I wonder if I might raise a matter. None of the information that we have filed was in Mr. McDonald's area of expertise for this particular panel and I'm--Mr. McDonald was actually supposed to be on vacation this week and he has an extended family grandchild here from outside of the province and he's actually here from central Newfoundland, I wondered if it would be possible, of course, if the panel members wish to ask Mr. McDonald questions, I'm sure that won't be a problem, but if there are no questions for Mr. McDonald, I wonder if it would be possible to excuse him from the panel this evening, rather than get him to stay over.

CHAIRMAN:

Q. I think all of the questions we had, had to do with the evidence that had been led so far.

And where Mr. McDonald wasn't involved in that much of it, I don't think there's a problem with that, if he wants to be excused. Are there any problems with any of the, with counsel.

MR. HUTCHINGS:

Q. I see no difficulty with that, Mr. Chair.

CHAIRMAN:

Q. You're excused, Mr. McDonald.

GREENE, Q.C.:

Q. Thank you very much. I'm sure his family will appreciate it.

CHAIRMAN:

Q. You're welcome. At 9:00 in the morning. Thank you.

Upon conclusion at 4:00 p.m.

CERTIFICATE

I, Judy Moss, hereby certify that the foregoing is a true and correct transcript in the matter of Newfoundland and Labrador Hydro, 2004 Capital Budget Application, heard before the Board of Commissioners of Public Utilities, Prince Charles Building, St. John's, Newfoundland and Labrador on the 9th day of July, 2003 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 9th day of July, 2003

Judy Moss