(9:40 a.m.)

MR. SAUNDERS, CHAIRMAN: Good morning.

MS. GREENE, Q.C.: Good morning.

MR. SAUNDERS, CHAIRMAN: Any preliminary matters or motions.

MS. GREENE, Q.C.: I have none, Mr. Chairman.

MR. HUTCHINGS, Q.C.: None here, Mr. Chairman.

MR. SAUNDERS, CHAIRMAN: If not, then Mr. Hutchings, you're ready to resume?

MR. HUTCHINGS, Q.C.: I am, thank you.

MR. SAUNDERS, CHAIRMAN: The witnesses are in place, I see.

MR. HUTCHINGS, Q.C.: Good morning, gentlemen.

MR. DOWNTON: Good morning.

MR. HUTCHINGS, Q.C.: I just want to get back for the moment to the issue of the various reports that we discussed at the end of the day yesterday. The telecommunications report, you told us, was an internal report, so I take it we can take that as Hydro's position on the issues that are dealt with in it?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, the IT Technical Architecture Strategy was somewhat a joint effort. It involved X-Wave and NewTel. Has Hydro adopted that report as its position in respect of those issues?

MR. DOWNTON: We have adopted it as a general road map.

MR. HUTCHINGS, Q.C.: Okay.

MR. DOWNTON: But on a go forward basis we will basically look at what, I guess, the IT Architectural Strategy says and I guess also where technology is at the point in time, and that strategy document is intended to be refreshed on an 18 to 24 month cycle anyway, so like I say, it provides a road map, but at the same time you continually look at other alternatives.

MR. HUTCHINGS, Q.C.: Okay, so you have not committed at this stage to doing the LAN and the WAN and all these things necessarily that are included in that report?

MR. DOWNTON: We basically have put forward budgets to address various aspects of the IT Architectural Strategy, and what you will basically find is that there are some refinements, if you want to call it that, to the IT Architectural Strategy, in basically how we interpret what is there and are looking at ways to further reduce costs.

MR. HUTCHINGS, Q.C.: Uh hum, okay, but to get back to my question, the only projects to which you are committed at this stage from Hydro's point of view, are the ones that are reflected in your current capital budget filing?

MR. DOWNTON: That's correct.

MR. HUTCHINGS, Q.C.: And the third report that we talked about yesterday was the KEMA report, has that been adopted as Hydro's position?

MR. DOWNTON: I will let Mr. Haynes speak to that.

MR. HAYNES: The KEMA report basically reviewed the Energy Control Centre, the state of its condition, how easy it is to repair, parts availability, and I guess, technology, and basically that, the KEMA report is (inaudible) in part, along with our own internal overview of that report, the justification for proceeding with that particular project, which is to replace the Energy Management System of Newfoundland and Labrador Hydro.

MR. HUTCHINGS, Q.C.: Okay, so you accept as Hydro's position, the recommendations of the KEMA report.

MR. DOWNTON: When you say position, I don't regard it as a position. It is our intention to replace the Energy Management System, and as we go along and dialogue with KEMA and the vendors and see what opportunities are there, what enhancements can be made or what things can be changed, we will address those as we go. It was basically to come up with a suggested approach to replace the Energy Management System, the cost estimates to do so, and that is what we are proposing.

MR. HUTCHINGS, Q.C.: KEMA has within its report and implementation plan. Is it Hydro's intention to proceed with that plan?

MR. DOWNTON: Generally.

MR. HUTCHINGS, Q.C.: Okay, and are there any particular aspects in the plan that Hydro does not intend to proceed with?

MR. DOWNTON: I would suggest that we have not included all things. There are things in that report along the lines of changing around the organizational structure, there's options, and they are things that we will certainly look at, but we have not concluded that we are going to separate the Energy Management System from the IS and T Department. That is a recommendation as one of the options that were put forward, but we have not decided we are going to do that.

MR. HUTCHINGS, Q.C.: Okay.

MR. DOWNTON: What we have concluded is that we do need to act on the replacement of the Energy Control Centre.

MR. HUTCHINGS, Q.C.: Alright, getting down then to some of the specific projects that are included in the capital budget for IS and T, I'd like to look first of all at the West Coast PLC Replacement, and that's in your filing at page B-109, and dealt with in the telecommunications plan, Section H. Specifically, there's a technical report at the back as Appendix F to the telecommunications plan, and it's dated August the 20th, 2002, and just so we have all the references that we might be looking at, Section 3.1 of the telecommunications plan itself at page 6, talks about the west coast microwave radio system and so on.

MR. DOWNTON: Can you indicate what page that is again please?

MR. HUTCHINGS, Q.C.: The last reference I made I think was page 6 where it's talking about the telecommunications infrastructure, and it talks about the west coast microwave radio station system, and then into 3.2, it talks about the powerline carrier.

MS. NEWMAN: So we had Appendix F, and that's the last big document in this report

MR. HUTCHINGS, Q.C.: Yes, yeah, that's the final appendix to the telecommunications report.

MS. NEWMAN: It looks like it's about 30 pages from the back or so, maybe 40 pages.

MR. HUTCHINGS, Q.C.: I would guess about that, yeah. So I presume the starting point here, Mr. Downton, is that the existing powerline carrier system on the west coast is obsolete.

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, so the issue becomes then what one does to provide the service that that powerline carrier system is presently providing. Had there been specific failures on that system that have caused problems in recent years?

MR. DOWNTON: Basically it's, the technology itself is obsolete. The manufacturer no longer supports the equipment, and because it carries our teleprotection signalling as well as operational voice and data, I guess we are being proactive to replace the infrastructure prior to the fact that we have excessive failures. We have had significant problems on other powerline carrier systems in that area, so again, we are replacing them before they cause us problems.

MR. HUTCHINGS, Q.C.: Okay, so what we're talking about are the systems on 243, 245, 234, and 247?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, now as regards powerline carrier systems generally, I take it that Hydro has accepted in the past, and continues to accept for some applications in the future that that type of service provides adequate teleprotection?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay.

MR. DOWNTON: For specific areas.

MR. HUTCHINGS, Q.C.: Yes, I notice in Appendix F to the telecommunications plan, you say at the end of the first paragraph on page 6 that the PLC link between Cat Arm generating statement and Deer Lake terminal station will be replaced with a new double channel PLC

as there is no economic alternative, so you are planning to continue to use PLC for teleprotection in the future.

MR. DOWNTON: In specific cases.

MR. HUTCHINGS, Q.C.: Yes, okay, so we should look, I presume then, to some justification for using something else other than PLC if the cost of the PLC is less than the alternative, correct?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Yes, okay, so PLC provides an adequate service.

MR. DOWNTON: For specific cases.

MR. HUTCHINGS, Q.C.: Yes, for teleprotection on powerlines.

MR. DOWNTON: For specific cases, yes. The thing is is powerline carrier provides more than teleprotection. It also provides operational voice and data service as well, so basically you have to look at the broader brush rather than just looking at specific instances.

MR. HUTCHINGS, Q.C.: Yeah, I understand that, but the most critical function is teleprotection, would you agree with that? That was a yes, was it?

MR. DOWNTON: That was a yes.

MR. HUTCHINGS, Q.C.: Okay, alright, so looking at page 7 of that Appendix F report, you're dealing with TL-243 and 245. You are proposing at an additional cost of $158,500, to use a digital microwave radio system instead of a powerline carrier, correct?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, and your reasons for preferring that are in the second full paragraph on that page and the first of them is stated, it provides a higher system availability, for example, communications are not lost when the transmission line is removed from service due to a forced or planned outage. That notion of communications being lost when a transmission line is out is inherent in the PLC system, isn't it?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, so anywhere where you're using PLC that will happen.

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: And you're prepared to live with that between Cat Arm and Deer Lake, for instance.

MR. DOWNTON: Well, between Cat Arm and Deer Lake, there is no alternative.

MR. HUTCHINGS, Q.C.: Okay.

MR. DOWNTON: Typically where we do, in other cases where we have forecasted outages on our transmission system, and as such, when we ground it, we lose our powerline carrier, we will institute, if possible, alternative routing for our voice and data systems.

MR. HUTCHINGS, Q.C.: Yes, and that can be done between any two points.

MR. DOWNTON: No.

MR. HUTCHINGS, Q.C.: I mean there are ...

MR. DOWNTON: It can't be done between any two points if basically the services are not available at the points.

MR. HUTCHINGS, Q.C.: No, but I mean is there anywhere that there is not a satellite service available, satellite telephone service?

MR. DOWNTON: Basically satellite telephone service is primarily used for voice communications, so yes, you could use it for that, but for the actual data, that would be another question.

MR. HUTCHINGS, Q.C.: Okay, in cases of outage, how often will it happen that there will be data that will be required to be transmitted while the outage is in effect?

MR. DOWNTON: I would not ... well, I'll attempt to answer it. Primarily, especially for generating stations where you have water levels that you need to constantly monitor, that would be the primary concern as well as terminal stations where you also need that information to support our customers, etcetera, so it really depends on the situation, and that's why in some cases for a very small station, we may not elect to

monitor, and in other cases for our larger, more important stations, that we would elect to provide some kind of a route diversity for voice and data.

MR. HUTCHINGS, Q.C.: Okay, so with respect to the generating station justification, that wouldn't have anything to do with the Howley to Deer Lake terminal station line, would it?

MR. DOWNTON: Could you repeat that question please?

MR. HUTCHINGS, Q.C.: You suggested that it was important to have a data link at the end of a line where there was a generating station, correct?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, on TL-245, which goes from the Howley terminal station to the Deer Lake terminal station, there is no generating station, correct?

MR. DOWNTON: From Howley to Deer Lake?

MR. HUTCHINGS, Q.C.: Right.

MR. DOWNTON: There is no generating station at either end there.

MR. HUTCHINGS, Q.C.: No.

MR. DOWNTON: However, Cat Arm does tie into Deer Lake, and Hines Lake does tie into Howley, so you have generating tying into both ends of it.

MR. HUTCHINGS, Q.C.: No, I understand that, and I mean it might be a different issue on TL-243 where Hines Lake is at the end of the line.

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, so the issue becomes whether there is any available way of moving your data from Hines Lake to Howley other than the digital microwave that you're proposing, and have you looked into that possibility?

MR. DOWNTON: We have not looked into that specific possibility.

MR. HUTCHINGS, Q.C.: What sort of data are you talking about?

MR. DOWNTON: Well, basically data for providing status of the breakers, voltage levels on transmission lines, control, the ability to control the breakers in the station.

MR. HUTCHINGS, Q.C.: Uh hum, and in what form does that exist at the Hines Lake station, for instance?

MR. DOWNTON: You mean the Howley data?

MR. HUTCHINGS, Q.C.: No, I'm understanding you to say that there is data at the Hines Lake generating station that you need to move out of there, whether or not your transmission line is up, is that correct?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: So in what form ... and that data presumably exists in Hines Lake, at Hines Lake, is that where the data is that you need to move?

MR. DOWNTON: Repeat the question again please?

MR. HUTCHINGS, Q.C.: Okay, the data that we're talking about moving over the digital microwave radio system, which is being suggested as the alternative to the PLC, I'm assuming exists in Hines Lake in some form, is that correct?

MR. DOWNTON: No.

MR. HUTCHINGS, Q.C.: Okay, where is the data?

MR. DOWNTON: The Howley data will exist in the Energy Control Centre. It doesn't exist in Hines Lake.

MR. HUTCHINGS, Q.C.: Okay, well ...

MR. DOWNTON: Basically what happens is that the data from Howley now is brought back over the powerline carrier to Hines Lake, and then there it's put on other telecommunications infrastructure and brought back to the Energy Control Centre here in St. John's.

MR. HUTCHINGS, Q.C.: Okay, I'm obviously misunderstanding what you said earlier then because you spoke of the importance of having a data link to the generating station. Did I misunderstand that, that there's data at the generating station you need to move?

MR. DOWNTON: Yes, yes.

MR. HUTCHINGS, Q.C.: Okay, so what data is at the generating station in Hines Lake that you need to move?

MR. DOWNTON: All the data that's required for the operation and control of the plan including water levels, etcetera.

MR. HUTCHINGS, Q.C.: Okay, and in what form does that exist at the Hines Lake plant?

MR. DOWNTON: It exists in the form of, I guess, data that is put into a proprietary protocol, that's sent back to the Energy Control Centre.

MR. HUTCHINGS, Q.C.: Okay, so it's in an electronic form?

MR. DOWNTON: Yes, yes.

MR. HUTCHINGS, Q.C.: Okay.

MR. DOWNTON: It's in digital, yes, digital electronic form.

MR. HUTCHINGS, Q.C.: Okay, alright, the Hines Lake station is not a manned station now, is it?

MR. DOWNTON: It is a remote controlled station.

MR. HUTCHINGS, Q.C.: Yes.

MR. DOWNTON: And basically there are roving operators which frequent the stations on an as required basis, but it is classified as a remote station, yes.

MR. HUTCHINGS, Q.C.: Okay, so are these operators capable of reducing the data which exists there in digital form to paper form?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: So while there was an outage, you could have someone at the Hines Lake station put that on paper and fax it to St. John's?

MR. DOWNTON: Yes, that is a possibility.

MR. HUTCHINGS, Q.C.: Okay.

MR. DOWNTON: However, with that said, are you going to have someone there 24 hours a day, seven days a week while you have an outage?

MR. HUTCHINGS, Q.C.: No, presumably for planned outages, you can plan to have someone there. You say they're roving and they're in there ... it sounds like they're in there a fair bit.

MR. DOWNTON: Not really.

MR. HUTCHINGS, Q.C.: Was I getting, was I getting the wrong impression with your answer?

MR. DOWNTON: Yes, you are getting the wrong impression. They are not in there on a regular basis. They frequent, they have a schedule to frequent the station, but the station is not a manned station.

MR. HUTCHINGS, Q.C.: No, no, I understand that. You said they frequented the station, so I presume ... how often would there be someone there?

MR. DOWNTON: I can't answer that ...

MR. HUTCHINGS, Q.C.: You don't know.

MR. DOWNTON: ... question specifically.

MR. HUTCHINGS, Q.C.: So you haven't looked into that.

MR. DOWNTON: No.

MR. HUTCHINGS, Q.C.: No, okay.

MR. HAYNES: Can I ... would I be able to respond?

MR. HUTCHINGS, Q.C.: Oh sure.

MR. HAYNES: We don't treat all of these hydroelectric stations the same way. We don't put the same amount of effort into automatic data that comes back to the Control Centre for, say, Snook's Arm and Venom's Bight. We may have it for Paradise River, but that's, you know, that is a 9 megawatt plant. Hines Lake is maybe an 84 megawatt plant, it's an integral part of the production, and when the Control Centre says they need 84 megawatts, they need it, and they need it now. The telemetry that comes back is the water levels, it's breaker status, it's the megawatts and megabars on the machine, there's hoards of data that comes back, and it

may be okay to fax back, you know, a daily or a midnight report from Snook's or Venom's, but it will not suit for Hines Lake or Cat Arm or Granite Canal or Bay d'Espoir. It's not a small, I won't say insignificant, but it's not a ... it is a key component of the generation and it's required.

MR. HUTCHINGS, Q.C.: Okay, how is that data getting from Hines Lake to the Energy Control Centre now?

MR. DOWNTON: Okay, pass it back to ...

MR. HUTCHINGS, Q.C.: I'm easy, whoever wants to answer.

MR. DOWNTON: Actually, it basically ... it goes over the microwave infrastructure from Hines Lake through to Stoney Brook. At present it goes over NewTel's fibre system as far as Sunnyside, and then it basically gets on the power infrastructure and goes from Sunnyside to the Energy Control Centre.

MR. HUTCHINGS, Q.C.: Okay, so in the event of a forced or planned outage, presumably the Aliant microwave radio system is there and available for use to move that data, is that correct?

MR. DOWNTON: From where?

MR. HUTCHINGS, Q.C.: From Hines Lake?

MR. DOWNTON: No.

MR. HUTCHINGS, Q.C.: Didn't you just tell me that's what's happening now?

MR. DOWNTON: No, basically the data goes over our infrastructure from Hines Lake to Grand Falls, and then it gets on Aliant's fibre system at Grand Falls and goes to Sunnyside, and then at Sunnyside it gets on our infrastructure and goes to the Energy Control Centre.

MR. HUTCHINGS, Q.C.: Okay, I'm trying to get back to TL-243, okay.

MR. DOWNTON: Yeah, the other point I should make is that as much as, if that plant is in production, one of the things that you will lose by not having the data available is the fact that automatic generation control will not function, will only operate in manual, so you'll lose your water efficiencies as well.

MR. HUTCHINGS, Q.C.: Yeah, okay, I understand that, but your proposal here is, among other things, to replace the existing PLC on the TL-243 with digital microwave, correct?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, one of the things that you're saying is that you will get through that a higher system availability, for example, communications won't be lost when the transmission line is removed from service due to a forced or planned outage, correct?

(10:00 a.m.)

MR. DOWNTON: Yes, that's correct.

MR. HUTCHINGS, Q.C.: From what you've said now, I take it that the information coming from Hines Lake to the Energy Control System, does not now travel over TL-243, is that correct?

MR. DOWNTON: Yes, what comes from Hines Lake does not travel over TL-243.

MR. HUTCHINGS, Q.C.: Okay, so how that gets from Hines Lake to the Energy Control System has nothing to do with this project, correct?

MR. DOWNTON: That's right.

MR. HUTCHINGS, Q.C.: Okay, what data travels over TL-243 that you need to move during a forced or planned outage?

MR. DOWNTON: Okay, basically right now what goes over TL-243 is the data from the Indian River terminal station, the Springdale terminal station, and the Howley terminal station.

MR. HUTCHINGS, Q.C.: Okay, so none of those, none of that relates to data from a generating station that you have the greater need to move during outages, correct?

MR. DOWNTON: Could you repeat the question again?

MR. HUTCHINGS, Q.C.: The three routes of data that you just spoke of, from Indian River, Springdale, and Howley, none of that is data that is coming from a generating station, correct?

MR. DOWNTON: That's correct.

MR. HUTCHINGS, Q.C.: Okay.

MR. DOWNTON: However, I mean it's still coming from terminal stations that you need to know whether the lines are in or out and what the voltages are so you can dispatch.

MR. HUTCHINGS, Q.C.: Okay, how do you find that out now?

MR. DOWNTON: Basically it comes over the, the data comes over the powerline carrier, from Springdale, through to Indian River, through to Howley, and then through to Hines Lake, and then it gets on our infrastructure and goes to the Energy Control Centre as I indicated before.

MR. HUTCHINGS, Q.C.: Okay, so ...

MR. DOWNTON: If you take out the, if you take out the powerline carrier between Howley and Hines Lake, what you will lose is visibility of the Howley terminal station, and also Indian River and Springdale.

MR. HUTCHINGS, Q.C.: Okay, and that's what happens now?

MR. DOWNTON: And that's what happens now, yes.

MR. HUTCHINGS, Q.C.: Okay, and how long has it been like that?

MR. DOWNTON: It's been like that since probably 1979/1980.

MR. HUTCHINGS, Q.C.: Okay, so the information that you're saying would be moved under this digital microwave radio system during outages, how are you getting that information now as regards to information that would travel over TL-243 PLC when it's up?

MR. DOWNTON: I don't know specifically.

MR. HUTCHINGS, Q.C.: You're probably not getting it, I think is the answer.

MR. DOWNTON: Well, I don't know specifically.

MR. HUTCHINGS, Q.C.: Okay.

MR. DOWNTON: I know in certain cases we do provide alternate communications.

MR. HUTCHINGS, Q.C.: Alright, and you've done that with a reasonable degree of success since the 1970s, is that correct?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay.

MR. DOWNTON: The other point that should be made, and it's the third point, it provides increased balance for existing and future operational administrative voice and data.

MR. HUTCHINGS, Q.C.: Yeah, I'm getting there.

MR. DOWNTON: Okay.

MR. HUTCHINGS, Q.C.: Okay, the second items that's mentioned as the justification for the extra $158,000 is the performance of teleprotection is greatly improved and reliability, security and speed, but I think we've agreed already that the teleprotection function is adequate under the PLC, is that correct?

MR. DOWNTON: For certain cases, yes.

MR. HUTCHINGS, Q.C.: I mean is there some reason that it wouldn't be adequate for 243 or 245?

MR. DOWNTON: What we look, I guess, the short answer is we would, the existing teleprotection, if we were to put powerline carrier back in there, we would not put in the same design as what was there before, because it does not perform as well.

MR. HUTCHINGS, Q.C.: No, you'd put in, it would be an improvement, you'd have a better PLC in there and you'd get better teleprotection.

MR. DOWNTON: That's right.

MR. HUTCHINGS, Q.C.: Okay, but you wouldn't get as good as microwave.

MR. DOWNTON: That's right.

MR. HUTCHINGS, Q.C.: Right, okay, we've just got to decide which level we're prepared to pay for here, is this issue. Okay, so the third item, you say it provides

increased bandwidth for existing and future operational administrative voice and data traffic. Let's deal first with the existing operational and administrative voice and data traffic. What sort of traffic is now moving over ... well, are you talking about when you refer to that existing operational and administrative voice and data traffic?

MR. DOWNTON: Basically what is carried over that now is the data that supports the Control Centre, and basically allows the remote terminal unit in the station to communicate with the Energy Control Centre, which is what we call operational data, and also carries the operational voice traffic as well, so that's basically, when I talk about operational voice and data, that's what I refer to.

MR. HUTCHINGS, Q.C.: Okay, so that's travelling over the PLC now?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, and could travel it over the enhanced PLC?

MR. DOWNTON: Maybe.

MR. HUTCHINGS, Q.C.: Does the advanced PLC provide any increased bandwidth over what exists today?

MR. DOWNTON: One of the issues which basically we've tried to address here, in the KEMA report, what it basically indicates is that on a future basis, we should be looking at a minimum of 9,600 bits per second as the bandwidth or data speed ...

MR. HUTCHINGS, Q.C.: Yeah.

MR. DOWNTON: ... to the RQ's.

MR. HUTCHINGS, Q.C.: Yeah, okay, just let me ...

MR. DOWNTON: Just let me finish now.

MR. HUTCHINGS, Q.C.: ... interrupt you there for a second because I wanted to talk first about existing operational and administrative voice and data traffic.

MR. DOWNTON: Okay.

MR. HUTCHINGS, Q.C.: And then we're going to get to the future in a minute, okay?

MR. DOWNTON: Okay.

MR. HUTCHINGS, Q.C.: So in terms of the existing, it's travelling over the PLC now and could travel over the enhanced PLC, is that correct?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, would the enhanced PLC provide any additional bandwidth over what you've got now?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, to what extent?

MR. DOWNTON: To, it will basically provide bandwidth for about, well what we call 9,600 bits per second.

MR. HUTCHINGS, Q.C.: Okay, that's the new PLC could do that?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Alright, okay, let's move on now to the future operational and administrative voice and data traffic, and I think that's what you had talked, started to talk about, and that's what KEMA is talking about.

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, so once ... there's a connection then between this west coast PLC replacement and the EMS project that KEMA's talking about, is there?

MR. DOWNTON: There is, I guess, a connection in the sense that we know that down the road we will require additional bandwidth.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: And I guess when it was identified in the KEMA report, the reason that we elected to go with the digital microwave is because the digital microwave will handle our future requirements, but putting in a powerline carrier system will not. We

would have to put in three powerline carrier systems over that transmission line to provide the requirements to meet what's defined in the KEMA report.

MR. HUTCHINGS, Q.C.: Okay, so you're saying that if the Board approves the EMS replacement plan in the form that is before them now, you will need this additional bandwidth on these two power lines?

MR. DOWNTON: I guess what I'm saying is down the road that is a future possibility and I guess what we did, we recommended to management that we should be proactive on this and the investment of an additional $158,000 was, was the thing that we should do.

MR. HUTCHINGS, Q.C.: Okay, just, I wanted to try to pin this down a little bit further. If the project for replacement of the EMS as contained in this year's capital budget application is approved, how much bandwidth are you going to need on these two powerlines at the time that that project is commissioned?

MR. DOWNTON: Well, basically when the EMS is turned up, it will basically be turned up to support the existing bandwidth, and then it will be increased at a future time.

MR. HUTCHINGS, Q.C.: I'm not following you now. If the project that's in here for the new EMS is approved ...

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: The day that you flick the switch and start the new system, how much bandwidth do you need on these two powerlines?

MR. DOWNTON: When we turn up the new Energy Management System, it will be turned up such that it will support the existing bandwidth, and it will be increased at a future time as we change from the proprietary protocol to the open protocols.

MR. HUTCHINGS, Q.C.: Okay, my technical understanding of this is obviously nowhere close to yours, but I had, I was approaching this from the point of view that what the EMS was doing would have to be supported by a certain amount of bandwidth. You're telling me that the EMS is supporting the bandwidth. Can you help me out with that?

MR. DOWNTON: I guess we know that right now we do have issues with bandwidth going into some of our stations.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: And it is our goal to increase that bandwidth, so basically you will provide better operational performance by the EMS and also by the Control Centre staff. We know that, and ... however, to my ... I guess from our perspective, to go and do both an upgrade on the bandwidths and also the replacement of the EMS at the same time is a risk, so what we would do is to put the Energy Management System in place using the existing bandwidth, and then upgrade to the additional bandwidth on a go forward basis.

MR. HUTCHINGS, Q.C.: Okay, and what will the additional bandwidth do for the EMS?

MR. DOWNTON: Well, just to give you an example, basically if you were operating a breaker at a certain station now, it could take upwards to a minute to basically get the indication back that you have a breaker change. With faster bandwidth, you will get that back in a much quicker timeframe, I'd say within anywhere from four to ten seconds.

MR. HUTCHINGS, Q.C.: Okay.

MR. DOWNTON: So you will basically have provided additional performance through the EMS by the dispatchers.

MR. HUTCHINGS, Q.C.: Okay.

MR. DOWNTON: Also for other parts you will actually improve some of the restoration in other parts of the province.

MR. HUTCHINGS, Q.C.: Uh hum, so why does that difference of 50 to 56 seconds make a difference, why is that important?

MR. DOWNTON: I guess just from the fact of, well I guess you could look at it the other way, most customers would like their power restored as soon as possible.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: And that's really what the issue comes down to, is trying to provide the best service that you can with the infrastructure that you have.

MR. HUTCHINGS, Q.C.: Okay, is that a cumulative effect in the sense that there's going to be 20 of these breakers that you need to get these indications back from, so we're talking about 80 seconds instead of 20 minutes, or are we just talking about one, so we're talking about one minute instead of four seconds?

MR. DOWNTON: Well, the way that it works is that each, each station is set up to be scanned, if you want to call it that, on a certain frequency.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: And that frequency in a lot of cases is dependent on the bandwidth into that station, so basically if you don't have the bandwidth then you can't scan it at a faster speed to get the information back in a timely fashion.

MR. HUTCHINGS, Q.C.: Yeah, no, I understand that. What I'm trying to do is sort of bring this down to the ground in terms of how long the lights are going to be off, and if it's a difference between four seconds and a minute, that's one thing, but if it's a difference between a minute and a half and 20 minutes, that's another thing. Can you tell me which situation we're in?

MR. DOWNTON: If you have multiple operations to be done in that station, you're only going to do one at a time.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: So I guess in a certain case it could be a cumulative.

MR. HUTCHINGS, Q.C.: It could be. Do you know whether that will be the typical situation or is that the odd situation?

MR. DOWNTON: I really have no idea, it really depends on, I guess, what happens as far as the power interruption.

MR. HUTCHINGS, Q.C.: Yeah, okay, so far as you can tell us, the difference may be between four to ten seconds or four to six seconds and a minute that we're looking at in terms of outage, that's what you're trying to get at, is that correct?

MR. DOWNTON: I'm just telling you, I guess, the time that it takes to actually, to process a, say a change in breaker operation through the EMS.

MR. HUTCHINGS, Q.C.: Uh hum, okay.

MR. DOWNTON: Whether it will be any longer than that, I can't speak to that.

MR. HUTCHINGS, Q.C.: Yeah, okay, I believe you said with the new PLC you'd be up to 9,600 bits per second, is that correct?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: And what does KEMA recommend for the EMS system? What speed do they think is required?

MR. DOWNTON: What they are recommending is that Hydro should be looking at 9,600 bits per second across the board.

MR. HUTCHINGS, Q.C.: And that's what this PLC will give you, the enhanced PLC.

MR. DOWNTON: The enhanced PLC will give me 9,600 bits for Howley, but it will not be able to support Indian River and Springdale which are downstream and will have to go over that powerline carrier as well.

MR. HUTCHINGS, Q.C.: Okay.

MR. DOWNTON: The way ... maybe, the way the data is transferred, it actually goes, say from Indian River to Howley and then Howley to Hines Lake, so that powerline carrier between Hines Lake and Howley will have to carry the bandwidth to support those two stations as a minimum.

MR. HUTCHINGS, Q.C.: Okay, so what link exists now from Indian River to Howley?

MR. DOWNTON: It's a powerline carrier.

MR. HUTCHINGS, Q.C.: And what powerline is that on?

MR. DOWNTON: TL-224.

MR. HUTCHINGS, Q.C.: Okay, so you ...

MR. SAUNDERS, CHAIRMAN: Is that in the microphone there, Mr. Downtown?

MR. DOWNTON: Sorry, TL-224.

MR. HUTCHINGS, Q.C.: Okay, you don't have any plan at the present time to upgrade that do you?

MR. DOWNTON: TL-224 and the line beyond that from Indian River to Springdale is being replaced this year.

MR. HUTCHINGS, Q.C.: Is being replaced this year?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: And with what?

MR. DOWNTON: It's being replaced with powerline carrier.

MR. HUTCHINGS, Q.C.: This enhanced one that we're talking about here?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: So that already could carry the 9,600 bits, could it?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Alright, I may be lost again now, so if the, if with the enhanced powerline carrier from Hines Lake to Howley, you can get 9,600 bits per second on that, and with the new line to Indian River, you're getting 9,600 bits on that, where is the slowdown?

MR. DOWNTON: The slowdown comes from the fact that as the, as you come backwards from say Indian River to Howley, Howley to Hines Lake, is that it becomes, it becomes cumulative, so rather than carrying, say one 9,600 bog *(phonetic)* channel, if you want to call it, over that TL-243, you'll end up having to, say, carry two, and that powerline carrier will not support two.

MR. HUTCHINGS, Q.C.: Okay, so the issue is more with respect to the configuration of Howley and Indian River, and Howley ... or Indian River and Springdale, Springdale and Grand Falls, whatever it is, rather than necessarily something inherent in TL-243 itself. It's a combination of things rather than what you're suggesting for TL-243 that's creating the problem, correct?

MR. DOWNTON: It's basically a combination.

MR. HUTCHINGS, Q.C.: Okay, how long has the KEMA report been in preparation?

MR. DOWNTON: I think we started the study, if I'm not mistaken maybe January, January or February.

MR. HUTCHINGS, Q.C.: 2002?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, were you aware at the time that you sought approval to upgrade the PLC on the Indian River/Howley stretch, that you would, had the possibility of replacing that with a microwave anyway?

MR. DOWNTON: Could you say that question again? I get the ...

MR. HUTCHINGS, Q.C.: You're telling me that the Indian River to Howley TLC was, is being replaced this year?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: With the enhanced PLC?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: I mean were you aware at the time that you sought approval for that project that you were going to do the digital microwave which I presume will mean that this PLC won't need to perform that function at all?

MR. DOWNTON: Which PLC, the ...

MR. HUTCHINGS, Q.C.: Indian River/Howley.

MR. DOWNTON: Indian River/Howley is required anyway.

MR. HUTCHINGS, Q.C.: So if the current project is approved, you're telling me that the data will travel

Indian River/Howley on the PLC that's going in this year.

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: And then will go to the digital microwave.

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: And that does not give you the same problem as two PLCs, is that correct?

MR. DOWNTON: Well, what we are ... I'm not sure what you mean by giving the same problems as two PLCs.

MR. HUTCHINGS, Q.C.: Well, you told me that if you had to go over two spans, you wouldn't get the 9,600 bits per second on the PLC.

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Are you telling me that you can go one span on PLC and one span on digital microwave and still get the 9,600?

MR. DOWNTON: I can basically ... well one PLC will support 9,600.

MR. HUTCHINGS, Q.C.: Yes, and the digital microwave obviously supports 9,600.

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: But I mean you're still talking two spans, are you not?

MR. DOWNTON: What do you mean by two spans?

MR. HUTCHINGS, Q.C.: Well, I'm asking you about the problem that you described if you had two spans of PLC, you couldn't get 9,600 cumulatively over the two of them.

MR. DOWNTON: Well, basically what I need is rather than 9,600, I need 19.2, that's what I'm trying to say, is that over the powerline carrier on 243, to support the future, you'll be wanting a minimum of 19.2. That's what I mean by cumulative, as the bandwidth comes back you accumulate it, and you would want 19.2.

MR. HUTCHINGS, Q.C.: Okay, are you going to need 19.2 on the Indian River to Howley?

MR. DOWNTON: Possibly or possibly not. It's ...

MR. HUTCHINGS, Q.C.: My question is, does the digital microwave radio that you're proposing to replace the PLC with on 243 and 245 solve the problem of getting you 9,600 bits per second from Indian River to Hines Lake?

MR. DOWNTON: There might ... let me answer it in a different way, if I will. The microwave infrastructure that's been proposed from Hines Lake to Howley, the reason that we proposed it is because it gives us operational flexibility for the future ... that putting in a powerline carrier now, we know it will cause us problems in the not-to-distant future, before the life of the, probably before the life of that powerline carrier expires, so we basically felt it was prudent to go ahead and recommend an expenditure of an additional $158,000 to provide that flexibility, and with that extra flexibility will come enhanced teleprotection, not only over, between Howley and Hines Lake, but also we will carry the teleprotection from Howley to Deer Lake as well to cover off that transmission line.

MR. HUTCHINGS, Q.C.: The closing words of the paragraph on page 7 say, the PLC alternative provides little opportunity to increase the bandwidth to Howley, Indian River and Springdale terminal stations for future power system or administrative applications such as substation automation or WAN connectivity over Hydro owned facilities. Is it planned to automate those substations in the near future?

MR. DOWNTON: There are no plans that I know of.

MR. HUTCHINGS, Q.C.: Yes, and the WAN connectivity issue is still one that I think you're only asking for some money to conduct some studies on this year?

MR. DOWNTON: Yes, that's correct.

(10:15 a.m.)

MR. HUTCHINGS, Q.C.: So those are future possibilities?

MR. DOWNTON: Those are future possibilities.

MR. HUTCHINGS, Q.C.: Okay, and we don't know when they may or if they will come about?

MR. DOWNTON: They will come about, but we don't know specifically when.

MR. HUTCHINGS, Q.C.: You don't know when, okay, so to the extent that there is a benefit for the digital microwave system related to bandwidth, that will all depend upon whether or not this Board at some point in the future approves capital money to allow some of the other projects that are now mere possibilities, is that correct?

MR. DOWNTON: Not really.

MR. HUTCHINGS, Q.C.: And why don't you think that's correct?

MR. DOWNTON: I guess the reason I say it in that respect is because, I mean we may elect to upgrade the bandwidth requirements on the existing infrastructure that we have and if we basically put a powerline carrier between Hines Lake and Howley, then basically we will not even be able to upgrade it to what we feel is required with that particular infrastructure, so I'm not sure ... I guess what we looked at, it will be an operational bottleneck, and I guess we felt that now is the time to deal with it rather than to deal with it again at some future date.

MR. HUTCHINGS, Q.C.: Okay, but the PLC you're talking about now will, in fact, increase your bandwidth from what you've been operating with up to now?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Yeah, okay. Alright, I want to turn now to the east/west microwave project, and that's dealt with at page B-106 in your filing, and in the telecommunications plan which is Section H of your filing, page 15, Section 3.4, and just an item for clarification first of all, on page 16 of the telecommunications plan at the bottom, in paragraph numbered (i), you say digital microwave radio facilities will provide a reliable and secure teleprotection circuit between the Bay d'Espoir generating station and the industrial load on the Avalon Peninsula. What do you mean by the industrial load on the Avalon Peninsula?

MR. DOWNTON: I guess, I can't speak to the exact words, but I know the way the wording used to be, it used to be load centre, so what we're looking at is we'd look at NARL as a significant industrial load, but also the fact that the Avalon is the largest load centre that we have on the island.

MR. HUTCHINGS, Q.C.: Okay, so you're talking more ...

MS. GREENE, Q.C.: We affectionately ...

MR. HUTCHINGS, Q.C.: Sorry.

MS. GREENE, Q.C.: I'm sorry, I just want to explain NARL, we affectionately refer to one of our large industrial customers, North Atlantic Refining is NARL.

MR. DOWNTON: Sorry.

MR. HUTCHINGS, Q.C.: That's fine, Mr. Chair.

MS. HENLEY ANDREWS: So do we, so we weren't surprised.

MR. HUTCHINGS, Q.C.: We knew exactly what he meant, so the reference really is to the size of the load in the area rather than necessarily an industrial load, because obviously there's larger industrial loads in other parts, in other places.

MR. DOWNTON: It's the importance of the load centres, yes.

MR. HUTCHINGS, Q.C.: Uh hum, okay, at the bottom of page 15, there's a sentence included in the plan which says to meet this goal, and that's the reduced reliance on leased services, it was proposed and approved by the Board to install an east/west interconnection microwave radio system between the existing Sandy Brook Hill and the new Bull Arm repeater sites, and I guess my question really is just one of internal perception at Hydro since there was some expenditure on this project approved for last year, is that correct?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: So just your ... I mean I'm not asking you for any legal interpretation, but just your perception within Hydro, is that the project now has been approved?

MR. DOWNTON: No.

MR. HUTCHINGS, Q.C.: No?

MR. DOWNTON: No, it's not approved until it's approved at the Board. What was approved was for us to do the actual engineering, which is what we've, which is what we are doing this year.

MR. HUTCHINGS, Q.C.: Okay.

MR. DOWNTON: It's no different than when we did the east coast, it was done in a very similar fashion.

MR. HUTCHINGS, Q.C.: Okay, so you would not agree with the statement that's made in the plan that it has been proposed and approved by the Board to install a microwave system?

MR. DOWNTON: It's been approved by the Board to go ahead with the engineering.

MR. HUTCHINGS, Q.C.: Yeah.

MR. DOWNTON: We are hopeful that the Board will approve the second half of the project which is for 2003.

MR. HUTCHINGS, Q.C.: Okay, and there hasn't been any installation done yet though, has there?

MR. DOWNTON: No.

MR. HUTCHINGS, Q.C.: No, okay, the reference to industrial load at the bottom of page 16 was in part of, the paragraph that begins, the justification for the proposed east/west microwave connection may be itemized as follows, and you talk about a reliable and secure teleprotection circuit between Bay d'Espoir and the industrial load on the Avalon Peninsula. I take it there is teleprotection in place there now?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: And how is that provided?

MR. DOWNTON: That's ... the existing teleprotection for 202 and 206 are provided over powerline carrier.

MR. HUTCHINGS, Q.C.: Okay, we won't repeat the discussion we've had about the teleprotection provided by PLC, I think that's already on the record. The second item here says that the infrastructure installed through the microwave radio system will enable the company to relocate approximately half of its VHF mobile radio repeaters to company-owned facilities. This will better position the company to be able to react to the downsizing of Aliant's infrastructure. I take it the reference there is to the VHF mobile radio system that's discussed in Section 3.7 of the telecommunication plan, is that correct?

MR. DOWNTON: That's correct.

MR. HUTCHINGS, Q.C.: Okay, and that's the system that you applied to the Board last year to replace, correct?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: And that application was not permitted and I understand from page 23 of the plan now, that's planned to be applied for for 2004/2005?

MR. DOWNTON: That's correct.

MR. HUTCHINGS, Q.C.: Okay, so in the event that the Board does not approve the replacement of that system in 2004/2005, I presume that this advantage of the interconnection microwave radio system wouldn't have any application any longer, is that correct?

MR. DOWNTON: Could you repeat that question please?

MR. HUTCHINGS, Q.C.: If the VHF mobile radio system is not approved by the Board, the new one for next year, I take it that this business of putting your repeaters on the structure you're going to create under this plan won't be an issue.

MR. DOWNTON: We will basically leave it on NewTel's infrastructure where it is now and pay the leasing, the associated leasing costs on a go forward basis.

MR. HUTCHINGS, Q.C.: Okay, and the third potential justification for the east/west microwave is reduction of your dependency on a third party.

MR. DOWNTON: That's one of the justifications, yes.

MR. HUTCHINGS, Q.C.: That's in ... okay, so those are the three items that are listed on page 16 to 17 as the justification, correct?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: That's the third one, okay.

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: On page B-107 of your filing, you note that you've agreed to meet with Newfoundland Power to review some areas of potential cooperation relative to this, but you say then, collaboration with NP will not reduce the costs of the project?

MR. DOWNTON: That's right.

MR. HUTCHINGS, Q.C.: Can you explain to me why the costs aren't reduced if you collaborate with NP?

MR. DOWNTON: Well, basically we'll be providing them pretty much with ... as a for instance, if we're going to provide teleprotection for them, say between Sunnyside and Clarenville, as a for instance.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: What we will do over the microwave infrastructure is provide the channel, the bandwidth, if you want to call it that, between those two points, and then on each end of the point, they will still have to provide the infrastructure, if you want to call it, to actually process the signalling, so there's really no reduction in the infrastructure that we would add, whether Newfoundland Power is there or not.

MR. HUTCHINGS, Q.C.: Okay, but I mean the channel that you would provide them over that line, as a for instance, is that a channel that's going to be there anyway if you proceed with the project as planned?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: So presumably they'll pay you something for that?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: If they use it?

MR. DOWNTON: Yes, yes.

MR. HUTCHINGS, Q.C.: Okay, so wouldn't you regard that as a reduction in your costs?

MR. DOWNTON: Well, it is a reduction in our operational costs.

MR. HUTCHINGS, Q.C.: Yes.

MR. DOWNTON: As opposed to the capital costs of the project.

MR. HUTCHINGS, Q.C.: Yeah, okay, yeah. Alright, I want to talk a little bit now about the EMS project and the KEMA Consulting report which is at Tab 5 of Section G of your filing, and the EMS capital budget explanation starts at page B-91. First of all, I want to try to understand a little bit better the interaction between the EMS per se, as dealt with in the project at page B-91, and the SCADA system which is dealt with as part of the migration study in B-120, because when I was reading the KEMA report it seemed to me that the EMS and SCADA or SCADA, whatever you call it, system, were basically going to be dealt with all at once and the description at B-91 seems to be directed towards EMS, while SCADA looks to be studied a bit more in 120, so can you just see if you can bring that together for me a little?

MR. DOWNTON: Yeah, basically B-91 refers directly to the KEMA report and basically speaks to the replacement of the Energy Management System, and B-120 speaks to the, to a study to be carried out to look at the replacement of the infrastructure that carries our operational voice and data systems now. Basically they are two separate entities. One is the EMS and then the other one is really the, the voice and data equipment that brings the voice and data from the field into the Energy Control Centre.

MR. HUTCHINGS, Q.C.: Okay, so are we in a situation where you can proceed with the replacement of the EMS as recommended by KEMA using the existing voice and data system and then migrate that to a new system at a later date?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, so there's no advantage to doing that all together, is there, or is there, in fact, a disadvantage?

MR. DOWNTON: Well, basically it speaks to two different projects. The B-91 speaks to, I guess, the technical obsolescence of the energy management infrastructure, and B-120 speaks to the obsolescence of

the infrastructure that's in the field that carries the operational voice and data, so basically it speaks to two, two different sets of infrastructure, admittedly that both of them do integrate at the front of the Energy Management System, and the Energy Control Centre.

MR. HUTCHINGS, Q.C.: I mean the KEMA report, in my reading of it, seems to talk as much about the SCADA system as it does about EMS.

MR. DOWNTON: No.

MR. HUTCHINGS, Q.C.: You don't think that's accurate?

MR. DOWNTON: Well, show me where it speaks to SCADA is probably the easiest thing.

MR. HUTCHINGS, Q.C.: Well, if you look at the table of contents, when you get into, (3), assessment of existing systems and processes, and just talking about the general assessment, and then they talk about SCADA assessment, and that's ...

MR. DOWNTON: Okay, well maybe I'll help clarify that.

MR. HUTCHINGS, Q.C.: And I mean it's the same thing in driving forces for change, the largest section seems to be SCADA, 4.3, and future system definition, one of the larger sections is SCADA requirements, 7.2.

(10:30 a.m.)

MR. DOWNTON: Okay, let me clarify that. Let me explain what the Energy Management System is and basically how it is built in a building block fashion. An Energy Management System starts off with a building block called a SCADA, which is Supervisory Control and Data Acquisition. So that's the fundamental portion of an Energy Management System. Then on top of that you put in another subsystem called, some people call it Automatic General Control and Economic Dispatch, so again, that layers on top of SCADA. Then you basically put in another set of applications which are often called power system applications or power network analysis tools, and then they layer on top of SCADA and AGC, so an Energy Management System actually consists of SCADA, AGC, and economic dispatch and power system analysis tools, plus there's other applications you can get as well, so as much as the energy management document here speaks to SCADA, what it's speaking to is an assessment of the SCADA functionality that is inherent in the Energy Management System itself. It's not speaking to anything on the outside.

MR. HUTCHINGS, Q.C.: Okay, so it's fair to say that SCADA is a part of EMS?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, but it's not that part that we're dealing with in B-91, we're not dealing with SCADA in B-91, we're just dealing with the add ons.

MR. DOWNTON: Well, basically we're dealing with SCADA in the sense that it's inherent to the Energy Management System.

MR. HUTCHINGS, Q.C.: Okay, alright, but we're not talking about replacing SCADA?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: We are?

MR. DOWNTON: Yes, because ...

MR. HUTCHINGS, Q.C.: In B-91?

MR. DOWNTON: In B-91, we're talking about replacement of the Energy Management System and by default you are replacing the software and hardware that supports SCADA, Automatic General Control and Economic Dispatch, and power system analysis. It's all, it's all one set of hardware and one set of software that's basically integrated.

MR. HUTCHINGS, Q.C.: Okay, but there are elements of SCADA that don't necessarily affect EMS, is that fair?

MR. DOWNTON: The field equipment that supports the SCADA functionality are like RTUs and the telecommunications infrastructure.

MR. HUTCHINGS, Q.C.: Okay, the B-120 project is talking about a migration assessment study developed, design and implementation of a wide area network communications infrastructure to replace the existing operational data and operational voice network using the GDC infrastructure, so if B-120 was completed and

the determination was made to proceed with this WAN, would SCADA continue to exist?

MR. DOWNTON: Can you repeat that question again?

MR. HUTCHINGS, Q.C.: If 120 was approved and it was decided to implement a wide area network and that went ahead, would SCADA continue to exist or would it be replaced by the WAN?

MR. DOWNTON: SCADA, in the traditional sense, SCADA is a part of the Energy Management System. What is in 120 really is the field infrastructure which carries the data back to the Energy Management System to support the SCADA functionality within Energy Management and then support the other functions within the EMS, such as automatic generation control and power systems analysis functionality.

MR. HUTCHINGS, Q.C.: Okay, so really what the WAN is doing is simply replacing the communications functions of SCADA, is that a reasonable description?

MR. DOWNTON: It's replacing the communications infrastructure which carries the data back to the Energy Control Centre.

\MR. HUTCHINGS, Q.C.: Okay, so the SCADA system would include the RTUs and all these types of things that are generating the data?

MR. DOWNTON: If you look at SCADA as the bigger picture, SCADA is a part of the Energy Management System, it is a part of the telecommunications infrastructure, and the RTUs, but the Energy Management proposal which is B-91, specifically deals with the replacement of the Energy Management System, which is located at the Energy Control Centre, and the B-120 specifically deals with the field equipment which will bring the information from the RTUs back to the Control Centre as well as the voice communications.

MR. HUTCHINGS, Q.C.: In your explanation, the description of the operating experience, B-91 to 92, you describe how the system basically developed over time and you indicate at the top of page B-92, that system availability is average 99.985 percent over the system's lifetime.

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Is that acceptable?

MR. DOWNTON: Overall performance of an availability, of those numbers is acceptable, but that is not what the issue is. The issue is ...

MR. HUTCHINGS, Q.C.: No, no, I'm not suggesting that's the only issue, but that has been, it has performed satisfactorily up to this point.

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Yes, okay, and you go on to say there are no functional deficiencies, it's doing what it's supposed to be doing at this point.

MR. DOWNTON: That's correct.

MR. HUTCHINGS, Q.C.: Okay, your difficulties arise out of the fact that the vendor support is not available and new spare parts are not available.

MR. DOWNTON: That's right.

MR. HUTCHINGS, Q.C.: Okay, there is reference both in the KEMA report ... I guess it's not here, it's probably just in the KEMA report, in terms of the availability of people trained to actually run the existing system, there is lack of support personnel who understand that system.

MR. DOWNTON: Basically the issue is not on the software side, it's on the hardware.

MR. HUTCHINGS, Q.C.: Yes.

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Can you just explain for me what issue that is, I mean is it simply that there haven't been people brought up in the system who have learned how to use it?

MR. DOWNTON: No, that's not the case. When the Energy Management System project was originally released, what we did, we trained internal staff to maintain the hardware, and as part of the project at that time, we also required local content to be part of that contract as well. In that regard, the company at that time, NORDCO, was engaged by Harris Controls to provide that local content and Harris Controls, they

basically trained several people as well to provide the hardware support.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: And I guess shortly after we went into operation, NORDCO ceased to exist, and those resources were no longer there, so basically we were down to the staff that we have, and since that time, our staff has either retired or moved on to other positions, so from that regard, that's one of the issues that we have. Even from an external perspective, Harris right now only has one person in their organization who can still support this equipment and he's retiring this year, and out of the 75 systems which were in production when we went live probably in 1990, we are down to three or four systems which are left in production, and there has been no spare parts manufactured for this system since we went live, which was 1990. Within two months of us going live, they basically indicated they were moving on to a new infrastructure.

MR. HUTCHINGS, Q.C.: Uh hum, okay, and I'm not sure I picked it up, but did you indicate how many systems were live at the time that you went live?

MR. DOWNTON: About 75.

MR. HUTCHINGS, Q.C.: Okay, so presumably there are sources of the spare parts from those systems between then and you're down to the three or four that are existing now.

MR. DOWNTON: We have purchased some additional spare parts, but what we basically are having problems with is the power supplies for the units are causing us the most problems now, as well as a card called a universal controller, so basically the ability to get those is an issue, but the real issues come to the fact of putting 14 year old equipment in 14 year old equipment, and basically to extend the life of the SCADA system we had in Bay d'Espoir a number of years ago, we went down the same route and it turned in to be a catastrophe because it does get down to the fact that you cannot maintain the equipment, and it does have a real impact on the operational aspects of the Control Centre.

MR. HUTCHINGS, Q.C.: Uh hum, okay, the KEMA Consulting report at page 5-1 discusses the alternatives to dealing with the existing system.

MS. GREENE, Q.C.: Mr. Hutchings, the page again?

MR. HUTCHINGS, Q.C.: 5-1, and there are a number of different options discussed including maintain existing systems and processes, replace existing systems and processes that can, it's talked about either in conjunction with or separate from CF(L)Co. In terms of the disadvantages and risks of maintaining the existing system, it's noted that the hardware becomes increasingly more difficult to maintain and reliability will begin to decrease and it will become vulnerable to extended outages. I think (b) then talks about the issue that you've talked about already, with replacing experts no longer readily available. I presume there are people on your staff who could be trained to do the functions that your current experts are doing?

MR. DOWNTON: The training is no longer available, training has not been available for this infrastructure since about '95/96.

MR. HUTCHINGS, Q.C.: But I mean presumably the people who are doing it now can pass their knowledge on to people who could do it in the future, is there some reason why that could not happen?

MR. DOWNTON: We have attempted over the years to do that, but it has not proven to provide a level of service, but the real issue comes down to the fact that you can train the people, but if the equipment is continuing to fail, you're really not addressing the issue.

MR. HUTCHINGS, Q.C.: I understand what you're saying and I want to try to deal with the various items that are mentioned in the report here. They talk about personnel dissatisfaction, and that's understandable. (d), NLH has no ability to react, to quickly react to possible changes in mission. Now the changes in mission, I think, were discussed earlier in the report, and that seemed to contemplate possibly legislative or other change whereby Hydro might or might not be interacting on a different basis with Newfoundland Power, or might buy Newfoundland Power or be bought by Newfoundland Power, things of that nature?

MR. DOWNTON: I think basically it speaks to, I guess, any implications which might come from the Energy Policy Review.

MR. HUTCHINGS, Q.C.: Yes, okay, and does Hydro have any current information as to specific actions that

Government may take arising out of the Electricity Policy Review?

MR. DOWNTON: I wouldn't be able to speak to that.

MR. HUTCHINGS, Q.C.: Mr. Haynes?

MR. HAYNES: No.

MR. HUTCHINGS, Q.C.: No, okay, alright, the other disadvantages that are talked about there, communications limitations remaining, efforts to maintain data consistency requires some extra effort. The OIS remains nonredundant, have there been operating problems with the OIS itself ... that I understand is the program that you use to allow the EMS to communicate with other programs?

MR. DOWNTON: Not that I'm aware of.

MR. HUTCHINGS, Q.C.: There are issues about functions being integrated or not, powerline systems applications are dated, we understand that, communications error and statistics reporting is limited, and I take it that's an issue of data manipulation in terms of you can't get the reports in the format you'd like them.

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: And tools, tools that the operations could use are nonfunctional, you can't use your existing software, I guess, mainly to the extent that it could be used under a different arrangement, is that correct?

MR. DOWNTON: That's correct.

MR. HUTCHINGS, Q.C.: Yeah, okay, and your ultimate proposal then is to proceed in conjunction with CF(L)Co. to replace that system?

MR. DOWNTON: Basically I guess what we propose is in conjunction with CF(L)Co., we would take on a joint project to replace Hydro's Energy Management System, and CF(L)Co.'s SCADA system, and thereby, I guess, reduce the overall costs to do the project.

MR. HUTCHINGS, Q.C.: Okay, do you have a commitment from CF(L)Co., subject to Board approval in that regard?

MR. DOWNTON: Subject to the Board of Directors of CF(L)Co.'s approval, yes, it is in their capital plan.

MR. HUTCHINGS, Q.C.: Okay, this project also talks about an operator training simulator?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Have you made any projections as to the number of hours that such a simulator would be used if it were installed?

MR. DOWNTON: Not as far as I know.

MR. HUTCHINGS, Q.C.: Okay, is there a big turnover in power system operators in your organization?

(10:45 a.m.)

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: To what extent, how often would that ...

MR. DOWNTON: I don't have the numbers but I do know that a lot of the operators were hired when Hydro came into being, and a lot of them stayed with the company, and we've had quite a number of retirements in the last two or three years, and we are recruiting new people and I would suggest in the last two years we have probably three or four at least hired into the Energy Control Centre.

MS. GREENE, Q.C.: The issue isn't the turnover to date, the issue is the retirement date for the existing operators.

MR. HUTCHINGS, Q.C.: I thank Ms. Greene for her evidence on that point, Mr. Chair.

MS. GREENE, Q.C.: I keep forgetting ... that's my human resources hat, I also do the succession planning for our key critical positions.

MR. HUTCHINGS, Q.C.: Okay, alright, if we can turn then to the project at B-120, the wide area network communications infrastructure that's being discussed here, I take it is essentially that's described in the IT Technical Architecture Strategy Report?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, and I don't know if you were able to get a copy of that report.

MR. DOWNTON: I have a copy.

MR. HUTCHINGS, Q.C.: Okay, there are a couple of points, I guess, that I wanted to deal with. Am I correct that the general philosophy behind this report is that essentially every employee of Hydro should have access to a single network to input and output whatever data relates to their job function?

MR. DOWNTON: In the ideal environment, I mean that's what you're trying to achieve, but that will never be the case.

MR. HUTCHINGS, Q.C.: No.

MS. NEWMAN: Can I interrupt for a second, what report are we talking about here?

MR. HUTCHINGS, Q.C.: The Technical Architecture Strategy.

MS. NEWMAN: The report that was filed in the GRA?

MR. HUTCHINGS, Q.C.: Yes.

MS. NEWMAN: We have a copy here if the panel wants to have it to look at, or need it?

MR. SAUNDERS, CHAIRMAN: Will you need the full report or the ... are you just going to be referring to some of the pages, Mr. Hutchings?

MR. HUTCHINGS, Q.C.: I'll probably be referring to a few pages, Mr. Chair. If there are particular parts of it that I think you need, we can stop and try to get that for you, but I don't think that it will be at that level of detail that you're likely to need to have the whole thing, but we'll see where it goes.

MR. SAUNDERS, CHAIRMAN: Okay.

MS. NEWMAN: There is one copy here on the table if you do need it.

MR. HUTCHINGS, Q.C.: Okay, this is the report that was referred to yesterday.

MR. SAUNDERS, CHAIRMAN: Yes.

MR. HUTCHINGS, Q.C.: It's mentioned at D-102 as the response to U-Hydro-37, which was filed after the general rate hearing application was concluded, and it was filed in February, at the end of February 2002.

MR. SAUNDERS, CHAIRMAN: Maybe since it's now almost 11:00, we could break at this stage and you could probably indicate to the Clerk or Ms. Newman what pages you're going to be referring to and we can have them copied during the break and have the panel prepared. How's that?

MR. HUTCHINGS, Q.C.: I can look at that, Mr. Chair.

MR. SAUNDERS, CHAIRMAN: Okay, we'll break until 11:15.

(break)

(11:25 a.m.)

MR. SAUNDERS, CHAIRMAN: Okay, Mr. Hutchings, are we ready?

MR. HUTCHINGS, Q.C.: Yes, thank you, Mr. Chair, the Clerk has been good enough to photocopy some identified pages of the IT Technical Architecture Strategy, and there will be a number of those that I'll be referring to in connection with a couple of different projects as we go ahead, but I'll refer you to those as we go along. Mr. Downton, dealing first with the project at B-120, this is called a migration assessment study. Is this a study to determine if Hydro should go to a wide area network communications infrastructure, or how to go about it?

MR. DOWNTON: Well, basically it's to do an assessment ... I'm going to ask you to repeat the question.

MR. HUTCHINGS, Q.C.: Okay, my question is whether the project is to fund a study to determine if Hydro should go to a wide area network communications infrastructure, or to determine how to go about doing that?

MR. DOWNTON: No, it's not to determine how to go about it, it's really to determine ... we have a wide area network infrastructure now which basically is obsolete.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: And the intent of the assessment study is to look at the various technologies, and to determine which is the best technical fit to replace the existing infrastructure.

MR. HUTCHINGS, Q.C.: Okay, and how does that go beyond the IT Architecture Strategy that you have now?

MR. DOWNTON: It will take it down to a much more detailed level in a sense ... what, like I say, from what I remember what's in the IT Architectural Strategy, it speaks to the fact that ideally what we want to do is migrate to a single type of infrastructure. Ideally that infrastructure should be what you call IP, or internet protocol based technology, and in the architectural report, they do speak to several other technologies, and I guess what we want to discern at this point in time is which of those technologies we should be really going with and to, at the same time, to do a proof of concept, not only to basically speak to the technology, but to really do a proof of concept and show that this technology will work, and the migration aspect of it really deals with the fact that we need to implement at some future point the new infrastructure and replace the old, and we need to do it in such a fashion that we do not impact the operational voice and data system any more than we have to.

MR. HUTCHINGS, Q.C.: Okay, has Hydro committed at this stage to the IP protocol or is that still an issue for debate?

MR. DOWNTON: I guess Hydro has committed to the IP protocol, especially for the local area network, because I mean that's the standard in what's being used now.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: On a future basis for the actual wide area network, we basically have not committed to the IP protocol. We are hoping that the IP protocol will provide the solution because it will help to shrink our infrastructure, however, we also have to take into consideration the ability of that infrastructure to integrate, so that is the key issue that we have.

MR. HUTCHINGS, Q.C.: Uh hum, okay, it's fair to say, I guess, that this project, B-120, as well as a number of others in your current proposal are fairly direct results of the IT Architecture Strategy Report?

MR. DOWNTON: They are a direct result, but at the same time the IT Architectural Strategy again laid out a road map, but we still have to deal with the technical obsolescence issues.

MR. HUTCHINGS, Q.C.: Sure, okay, at page 10 of the IT Technical Architecture Strategy, which is in the materials that have been distributed, the report talks about security and network management. It says there are two overriding considerations that must be top of mind in the architecture and design of the company's IT infrastructure, and they are security and network management. Does Hydro accept that those are the two overriding considerations?

MR. DOWNTON: Probably overriding is a strong word, but security, yes, is a significant issue.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: And the ability to manage our infrastructure is a significant issue.

MR. HUTCHINGS, Q.C.: They go over onto the next page then and talk about the governing design principles, and there are a number stated there, common user experience, all users being able to access the resources, reliability of the network, infrastructure being scalable and so on. In these governing design principles, do you see any reference to a least cost alternative?

MR. DOWNTON: As far as looking at the cost, I mean the cost will be looked at as we deal with each individual project. The goal is to reduce costs where possible.

MR. HUTCHINGS, Q.C.: Wouldn't you say that one of the governing design principles should be to seek out a least cost alternative to provide the necessary services to Hydro?

MR. DOWNTON: To my mind it's fundamental to provide least cost if possible.

MR. HUTCHINGS, Q.C.: Okay, alright, is that something you've discussed with the authors of this report?

MR. DOWNTON: No, it's not.

MR. HUTCHINGS, Q.C.: The authors of the report do seem to have identified some difficulties in the current system and the use of the current system as it exists. This is, I guess, relevant to the notion of the capital budget because it's an issue about how Hydro uses the capital money that has been spent. On page 21 there's a description of some obvious difficulties with the organization of the server hardware and what they refer to as disarray in the server rooms. Have these issues been addressed by Hydro to date?

MR. DOWNTON: Yes, they are being addressed and some of the aspects of addressing that is some of the capital budgets that we've put forward as well.

MR. HUTCHINGS, Q.C.: Okay, most of this, I think, you would agree are questions of management, personnel management, and making sure that the proper directions are in place to maintain organizational tidiness?

MR. DOWNTON: Some of it is related to that, but some of it is also related to the, I guess, the history of how the infrastructure grew, and that when the infrastructure was originally probably put in and grown, adequate facilities were not in place so we tried to make do with the facilities that we had, but with the reliance on the infrastructure to the point that it is now, it requires further improvements.

MR. HUTCHINGS, Q.C.: Okay, now one of the other problems that is noted in the description, and there isn't a specific reference in the materials that have been copied, but it's the issue of a bypass of firewall security policy by use of modems, has that been addressed yet?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, and how has that been addressed?

MR. DOWNTON: Basically we have, as far as dial-in, we have undertaken a plan to remove modems from desktops from offices, unless absolutely required. Typically what we've done, we've put switches in front of modems which have to be left in place, so that no one can dial into those modems, and for some of the stations, we are basically hooking the devices into our wide area network infrastructure as opposed to actually dialing into those sites, so basically it's something that is being continually addressed.

MR. HUTCHINGS, Q.C.: Okay, and just go back for a moment to page 11 and the governing design principles. The third bullet there, it says the reliability of a network both for LAN and WAN is of paramount importance as the company moves forward to a single unified network view. As such, the design of the network focuses on achieving 99.99 percent availability for the LAN infrastructure, and 99.9 percent availability for the WAN infrastructure. When we discussed this yesterday afternoon, I was left with the impression that the LAN infrastructure essentially automatically provided 99.99 percent, and this wasn't, you know, a design criteria. When I read this, it leaves me with the other impression, that we need to design a network that will give 99.99 percent. Which of those two views, in your opinion, is correct?

MR. DOWNTON: Actually they're both true.

MR. HUTCHINGS, Q.C.: Okay.

MR. DOWNTON: Depending on the actual site you will find that the equipment itself will give you the number that you're looking for, and in other cases you will actually have to design to it. As far as the 99.9 percent for the wide area network, if you basically look at the, further in the Architectural Report, I think there was an assessment done and indicated that the existing infrastructure without any changes met the 99.9 percent number.

MR. HUTCHINGS, Q.C.: Okay.

MR. DOWNTON: What we did do, we classified our offices, Hydro Place, we basically classified as a priority one, or classification one, and then we looked at Bishops Falls, I think, and Churchill as classification two, and then we looked at our smaller sites as classification three, and we dealt with each one of those independently, because of the importance of the site, and as such made certain design considerations and cost considerations.

MR. HUTCHINGS, Q.C.: Okay, when you talk about the local area network, I mean what's the geographic extent to that?

MR. DOWNTON: Typically when you look at a local area network, you're talking about a network that's within a building.

MR. HUTCHINGS, Q.C.: Okay, and that's the way that it's used in this report when Hydro looks at it?

MR. DOWNTON: Yes and no.

MR. HUTCHINGS, Q.C.: Okay.

MR. DOWNTON: Nothing is ever straightforward. Most people look at a wide area network as branching out, connecting multiple sites.

MR. HUTCHINGS, Q.C.: Yes.

MR. DOWNTON: But what you will find now is with the technology, the wide area network and the local area network are actually becoming the same, because it's the same technology that's being used.

MR. HUTCHINGS, Q.C.: Yes, okay. I mean this report deals with both separately.

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: And when we talk about LAN or local area network here, I mean presumably there is one or more local area networks within Hydro Place itself?

MR. DOWNTON: There is one local area network within Hydro Place.

MR. HUTCHINGS, Q.C.: Okay, and are there other local area networks at other locations?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Where would they be?

MR. DOWNTON: Basically at all our offices, at Bishops Falls, Holyrood, Bay d'Espoir, Port Saunders, Stephenville, St. Anthony, Wabush, Churchill Falls, and Happy Valley.

MR. HUTCHINGS, Q.C.: Uh hum, okay, so anywhere you have more than one person, I guess.

MR. DOWNTON: Pretty much, yes.

MR. HUTCHINGS, Q.C.: Yes, okay, and conceptually, I guess, the WAN is looked at as a link between these various networks?

MR. DOWNTON: That's correct.

MR. HUTCHINGS, Q.C.: Local area networks, okay, so there are particular applications, I take it, for which if you're going to get 99.99 percent availability on your LAN infrastructure, you do have to customize and pay some extra money, is that correct?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: And those would be typically the ones outside St. John's?

MR. DOWNTON: The ones that we would put the most importance on would be Hydro Place first.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: And then Bishops Falls second.

MR. HUTCHINGS, Q.C.: Am I correct in assuming that what you've got in Hydro Place automatically gives you 99.99 percent, or do you need to customize that system to get 99.99 percent?

MR. DOWNTON: It was customized for that.

MR. HUTCHINGS, Q.C.: It has been customized?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, have other of the local area networks been customized for that purpose?

MR. DOWNTON: Bishops Falls.

MR. HUTCHINGS, Q.C.: Okay, and that's the only other one?

MR. DOWNTON: That's the only one that comes to mind, to be honest, yes.

MR. HUTCHINGS, Q.C.: Okay, so do any of the others have 99.99 percent by default?

MR. DOWNTON: By default they have it because of the equipment that's there.

MR. HUTCHINGS, Q.C.: Uh hum, okay, so everyone is now at 99.99 percent, is that correct?

MR. DOWNTON: It's my understanding ... well my understanding based on the sites that we upgraded.

MR. HUTCHINGS, Q.C.: The sites that?

MR. DOWNTON: The sites that we have upgraded, I think the answer is yes.

MR. HUTCHINGS, Q.C.: Okay, so are there any others planned for upgrading at this point?

MR. DOWNTON: As far as the local area network?

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: No.

(11:30 a.m.)

MR. HUTCHINGS, Q.C.: No, okay, alright, and in terms of achieving this design principle, your existing infrastructure, as I understand it, meets the 99.99 percent availability for WAN that's identified here.

MR. DOWNTON: Yes, yes.

MR. HUTCHINGS, Q.C.: Okay, I guess the other principle that we want to address is all users will be able to access the resources from any location, either within the network or outside the network. Am I reading this correctly to understand that a lineman is intended to be able to access the network with some sort of hand-held device wherever he happens to be?

MR. DOWNTON: That is the panacea, but realistically no, because ...

MR. HUTCHINGS, Q.C.: That's a bit of a pricey alternative, isn't it?

MR. DOWNTON: Yes, very pricey.

MR. HAYNES: It is not uncommon in the utility business to do that.

MR. DOWNTON: Yes.

MR. HAYNES: I think Saskatchewan Power, that's pretty standard fair in their line trucks. They have a laptop, just dial in and they get all the information. We are not there and we have no specific plans to go there, and it may be pricey but it's definitely not uncommon in the utility industry.

MR. HUTCHINGS, Q.C.: No, no, I understand that. I guess the issue becomes what we need.

MR. HAYNES: That's correct.

MR. DOWNTON: That's right.

MR. HUTCHINGS, Q.C.: In order to keep the thing running. I guess this brings us really to the question of the end user infrastructure, and page 53 has been reproduced in the materials that have been circulated. Perhaps you could explain, Mr. Downton, or first of all, your understanding of what this report is talking about when it uses the term thin client arrangement.

MR. DOWNTON: Yeah, that's ...

MR. HUTCHINGS, Q.C.: No reference to obesity I trust.

MR. DOWNTON: We've had that joke, yes.

MR. HUTCHINGS, Q.C.: I don't doubt.

MR. DOWNTON: But on a serious note, a thin client basically ... well let me give you an explanation of a traditional PC. A traditional PC basically has a CPU, it has its own disk storage, and basically it has its own processor, so it basically can run stand-alone. A thin client basically comes with a screen and a keyboard and electronics, but the actual software will run on a server.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: And basically that server basically can handle multiple users, typically anywhere from 30 to 40 users depending on the application, so really there's no intelligence as per se in a thin client, it just provides connectivity over the LAN, local area network, to a server.

MR. HUTCHINGS, Q.C.: Is that what I used to referred to as a dumb terminal?

MR. DOWNTON: That was the terminology used many years ago when ... yeah, back then. It's called thin client now. It's very similar in the fact that the technology is going back to a mainframe environment, so the thin client is really the dumb terminal and you

have a higher speed communications linking it to the server.

MR. HUTCHINGS, Q.C.: Okay, and in your conception of how your infrastructure is going to work, who will be the thin clients?

MR. DOWNTON: The thin clients are typically ... what we're looking at is everyone as a thin client to some degree.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: What we've done, we've categorized our users into three categories. One, say users who require, who are mobile and, say, would have a laptop. What we are looking at for them is that when they are disconnected from the network, then they will access the applications on their laptop. However, when they come and connect into the network, then they will basically be seen as a thin client to the infrastructure, and all there files, etcetera, will be stored on the server.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: The other classification of user would be what we call a power user, which would typically be someone who is using, say, CAD, or who is running applications which require a lot of power.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: Say, doing financial analysis, and again, except for, say, a CAD user doing CAD drawings, if he's doing normal, say, office productivity type of applications, then again, he would interact with the server as a thin client. And then the third category are really the rest of the users which will only have the screen, the keyboard, and will be actually fixed, so they will interact as a thin client. What we put forward in the proposal is a penetration, starting penetration of about one third of the users will be thin client, true thin clients, but at the same time, the thin client technology will also support the migration and support of JD Edwards One World, which is the next release of JD Edwards Financial ERP Sweep.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: So basically it's the strategic alignment in the sense that if we're going to put infrastructure there, we want to make sure we put infrastructure that will support our future directions as well.

MR. HUTCHINGS, Q.C.: Okay.

MR. DOWNTON: The advantages that thin client will bring, it basically significantly reduces administrative costs, primarily because the software resides in one place and in a very strategic fashion it locks down the ability of users to load on software that should not be there, so really it reduces costs anywhere from 25 to 50 percent of the traditional unmanaged PC.

MR. HUTCHINGS, Q.C.: Okay, at the bottom of page 53, there's reference to field staff located in vehicles or non-centralized locations, access being accomplished through the use of mobile devices and their hand-held devices. Is this any part of the current plan?

MR. DOWNTON: The real issue that we have because of our geography is that where we are, there is really no connectivity.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: So most of the connectivity that we can get is typically through dial-in, so if you have a mobile user, then that user can dial in, say from the hotel or from his home or whatever, but really there is no program in place to provide that connectivity.

MR. HUTCHINGS, Q.C.: Okay, I mean would you, in your current situation, see a need for that level of access?

MR. DOWNTON: Well, I would phrase it, if the business can justify it, then that's an issue, but right now I don't see it as a requirement.

MR. HUTCHINGS, Q.C.: Uh hum, okay.

MR. DOWNTON: But the other thing is, is that this document is a vision document as well.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: And it's looking, say, ten years down the road, so I mean these are things which will probably come to bear in that ten year timeframe.

MR. HUTCHINGS, Q.C.: There isn't a reference in the materials you have, but the report refers to the fact that

the, as regards to the supervisory control and data acquisition, they say the proprietary Harris protocol will have to be used until at least 2005.

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Why is that?

MR. DOWNTON: Because the existing Energy Management System can only speak to Harris proprietary protocol.

MR. HUTCHINGS, Q.C.: Okay.

MR. DOWNTON: So you will not be able to convert until that system is replaced.

MR. HUTCHINGS, Q.C.: Uh hum, alright, we've reproduced then starting at page 80, the discussion of the infrastructure, and some of this gets into another project that I wanted to speak about a little later on, but at the beginning of page 80, in dealing with servers, it's noted that the file and print servers were recently upgraded in most locations. They say the general specification is more than adequate for Hydro's general file and print needs. Is that a comment that you agree with?

MR. DOWNTON: Well, it meets Hydro's needs, yes.

MR. HUTCHINGS, Q.C.: And will for some time?

MR. DOWNTON: It will meet the ... well, yes, it will meet those requirements.

MR. HUTCHINGS, Q.C.: **Okay, there's a note along the way here which I don't think is in the materials that have been reproduced, but it refers to a policy of increasing disk space, and I believe this is a reference to disk space on the servers, when 50 percent of the existing disk space is used. Is that in fact your policy?**

MR. DOWNTON: **I would have to confirm that with my computer operations manager.**

MR. HUTCHINGS, Q.C.: **Okay, so are you aware of whether or not there is a policy at all or ...**

MR. DOWNTON: **There is a policy.**

MR. HUTCHINGS, Q.C.: **Okay, yeah, actually it's not among the materials that were reproduced, but it's at page 19, in 4.5.3 of the report. It says Hydro has developed a policy of purchasing additional disk space for its servers when disk usage reaches 50 percent. Anyway, perhaps you can look into that and let us know, and I'd be interested in knowing whether or not there was any survey done in terms of whether that is a policy that is standard, either in your industry or in IT structures generally that you're familiar with or if you have any information in that regard.** There is also a comment, and I think we missed this page on the reproduction as well, it's in Section 8.5.18, that work group printers deployed are oversized for the number of people that use them. Were you aware of that?

MR. DOWNTON: I've seen that comment, yes.

MR. HUTCHINGS, Q.C.: Has any action been taken in that connection?

MR. DOWNTON: We are, we are reducing the printers, as they become obsolete they are being taken out of service and not being replaced.

MR. HUTCHINGS, Q.C.: There is a separate project about replacement of peripherals, has that policy been built into that project?

MR. DOWNTON: Yes, yes.

MR. HUTCHINGS, Q.C.: Okay, are there specific deficiencies in your existing wide area network that require consideration of its replacement at this point?

MR. DOWNTON: The fact that the technology is obsolete and a large portion of it is no longer supported by the manufacturer, and those details are in the, I believe it's in the telecommunications plan. The bulk of our infrastructure, the multi-plexing portion is general data con *(phonetic)*. That equipment is 15 years old and there is a table which defines what portions of that infrastructure are no longer supported. The operational voice equipment which is in all the generating stations and the substations is no longer available, so it basically has to be replaced as well.

MR. HUTCHINGS, Q.C.: Okay, have you estimated a remaining useful life for that equipment?

MR. DOWNTON: Well, typically the equipment, the general data com equipment is 15 years old. Typical life for an intelligent multi-plexer, which that is, is 10 years.

MR. HUTCHINGS, Q.C.: But at this stage, as I understand B-120, all you're doing is a migration assessment study. You're not asking for approval to actually replace any of this equipment.

MR. DOWNTON: That's right, yeah.

MR. HUTCHINGS, Q.C.: Okay, so you have some confidence that it will continue to serve you for some small number of years.

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Into the future.

MR. DOWNTON: Whether it's one year or two years ...

MR. HUTCHINGS, Q.C.: Okay, so the ... if project B-120 is approved and the migration assessment study goes ahead, I take it from what you filed that that's planned to be completed within 2003?

MR. DOWNTON: Yes, the study.

MR. HUTCHINGS, Q.C.: Okay, and the Board will then have the opportunity to review any actual plans to make these changes in a future capital budget.

MR. DOWNTON: That's correct.

MR. HUTCHINGS, Q.C.: Okay, alright. A number of specific projects now I had a few questions on, Mr. Downton ... B-97. This is the project for the purchase of an additional server and software. It's apparently intended to deal with security data from the distributed operating systems. Can you just tell me how this information is handled now?

MR. DOWNTON: A lot of the, I'll say the report that presently comes off the Pix *(phonetic)* firewall is in a very cryptic hard copy fashion, and an electronic fashion as well.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: And basically we have similar issues with other reports that come from other critical security systems, and it has been, I guess, identified that we need to ... if we're going to adequately manage our security, then we should look at an infrastructure which will allow us to produce reports that can be easily understood and that we can basically take appropriate action at that point in time.

MR. HUTCHINGS, Q.C.: Uh hum, so is this purely a timeliness issue, that the data is there now and will, can get dealt with at a certain time, but you need to deal with it at an earlier time?

MR. DOWNTON: Well, basically it's the fact that the data is in, it's presented in such a manner that it's very difficult to extract the piece of information you're probably looking for, and it's very time consuming to do that, and it really does not allow easy understanding of what the security issues are at present.

MR. HUTCHINGS, Q.C.: Okay, so are you actually spending the time to do that analysis now, or is it just not being done?

MR. DOWNTON: We are doing a little bit of it, but it's not being done to the degree that it should be done.

MR. HUTCHINGS, Q.C.: Okay, have you projected any specific cost savings in terms of full-time equivalents which would arise out of this project?

MR. DOWNTON: No, I have not.

MR. HUTCHINGS, Q.C.: Do you expect that there will be some manpower savings as a result of this time saving?

MR. DOWNTON: No.

MR. HUTCHINGS, Q.C.: No?

MR. DOWNTON: Primarily because we are not doing some of the things that we should be doing now.

MR. HUTCHINGS, Q.C.: Okay, have you had experience of actual malicious entry into your system?

MR. DOWNTON: We have, I guess we've had discussions with the electronic warfare group, and we have had cases where our website has been found on terrorist organizations' host computers.

MR. HUTCHINGS, Q.C.: Oh, okay, but that presumably is something that, I mean your web, you mean your publicly accessible website?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Yes, okay, so there's a sign of interest but not necessarily a sign of active effort to penetrate your system.

MR. DOWNTON: Well, within the electric utility industry right now, probably the most prevalent issue that there is is security.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: And one of them is intrusion detection, and the other one is having sufficient monitoring equipment to be proactive in assessing your security requirements.

MR. HUTCHINGS, Q.C.: Okay, if we can move on to B-99. This project involves implementation of an enterprise storage management infrastructure specifically by the use of a storage area network, or SAN. This is an item that is discussed in the IT Technical Architecture Strategy at pages 82 to 85, and I think there may be actually another reference to it as well. Yeah, this I don't think is among the material that's been reproduced but the Architectural Strategy Report, in Section 8.2.4 talks about a back-up network, and it's at the bottom of page 65 going on to page 66, and there's recommendation, I guess, for a separate back-up LAN with connections to each server, and then the comment is made, in the long-term the adoption of storage area network technology and server consolidation at Hydro Place will reduce the need for a separate back-up network. Is there a specific reason why this project is regarded as necessary in the year 2003 as opposed to in the long-term?

MR. DOWNTON: Yes, there is several reasons. We currently have, well several issues actually. Right now we are finding with the data that we're backing up on the AS-400, with the current tape back-up technology that we're not able to back up the information and it is impacting the operational, or the time that the JD Edwards Suite is available to the business. We also have tape back-up technology that is obsolete, and also the storage area network technology is more cost effective to deploy than assigning disk space to individual servers.

MR. HUTCHINGS, Q.C.: Okay, and as I understand the project, it really exists in two parts, one of which is the installation of a single tape storage system to replace the four existing ones, and according to your justification on page 100, that tape component can be implemented separately from the SAN?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, in terms of the SAN itself, this is really evolving technology, isn't it?

MR. DOWNTON: What do you mean by evolving technology?

MR. HUTCHINGS, Q.C.: Well, the question, I guess, is whether this has reached a point where it is clearly the direction that Hydro should be going in, or whether something is going to change in the technology. I mean these are not my words, evolving technology, it's actually in the IT report, in the project plan for the storage area network, which is in the back of the report itself, and has been reproduced in the materials, a couple of pages from the back, under the risks in Section 3.0 on page one of that project description, it says SAN technology is still evolving and as a result timing of infrastructure investment is key to avoiding stranded investment. I mean do you agree that this is evolving technology?

MR. DOWNTON: No.

MR. HUTCHINGS, Q.C.: Okay, so you don't agree with your consultant in that regard?

MR. DOWNTON: Well, basically when this was written about a year and a half ago, I mean a lot of things have transpired since then. Basically we've had demonstrations of the SAN technology, from what I understand, X-Wave has implemented it in their infrastructure in support of the Government, and as well, the St. John's Health Corporation is in the process of implementing SAN technology as well.

MR. HUTCHINGS, Q.C.: Okay, you say a year and a half ago, the date on this plan is December of 2001, are you talking about some earlier plan?

(12:00 noon)

MR. DOWNTON: Well, when this was started, well it was a year.

MR. HUTCHINGS, Q.C.: So as of December of 2001, X-Wave presumably regarded it as evolving, and you say that situation has changed since that time?

MR. DOWNTON: Well, basically it comes back to what you mean by evolving. Basically it's there, it's being used, and it is a cost effective solution.

MR. HAYNES: If I could add a comment, with respect to all ... and I am not a computer person from that point of view, but with respect to all this technology, it's all evolving. As soon as we buy a PC, six months later it's obsolete, or it's no longer supported. There were ... I did read an article, I don't have it here, and I wouldn't find the reference right now, between SAN and LAN and SAN is definitely leading the pack. It's all, in essence, evolving.

MR. HUTCHINGS, Q.C.: Yeah, no, I mean I understand that, you know, it's one thing to spend a thousand dollars or a couple of thousand dollars on a laptop and find it wanting in a year's time, but $2 million on a project of this nature, I think perhaps is there more than a second look?

MR. HAYNES: Oh, I don't disagree, but I think you also have to go back to your previous questions on the disk space. We right now have to expand all this disk space because the memory requirements are growing. We're populating the JD Edwards database over a timeframe, and it is growing in leaps and bounds, and this also partially addresses that problem, it can consolidate all your storage over multiple disk drives across the corporation as opposed to replacing every single one or upgrading every single one.

MR. HUTCHINGS, Q.C.: Okay, what is the, have you priced the alternative of continuing on with extra disk space for any further period of time?

MR. DOWNTON: Yes, over a seven year period the SAN technology will basically be about $700,000 cheaper, and it will also reduce our operation and maintenance costs by about 45 percent and save somewhere in the order of about $400,000 over a seven year period.

MR. HUTCHINGS, Q.C.: Okay, are those numbers in any of the materials that you filed?

MR. DOWNTON: No.

MR. HUTCHINGS, Q.C.: Okay, and what's the source of those?

MR. DOWNTON: Basically it's, we basically have additional back-up information if you want access to that.

MR. HUTCHINGS, Q.C.: Yeah, I think it would be useful for us to look at that. I mean obviously it's something that you're relying on to justify this project that we haven't seen, so I think it would be useful if we could have that reproduced, and we'd ...

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: ... talk about that again when we've had the opportunity to see the full file.

MS. GREENE, Q.C.: The information is before Mr. Hutchings. Mr. Downton had it prepared under his staff, so certainly the information is on the record. If Mr. Hutchings would like to ask Mr. Downton who prepared it, how it was prepared. It's only information ... we do ... in preparation for these hearings we do a lot of additional work and the question is whether it's helpful or not, but certainly Mr. Downton is prepared to speak to it now.

MR. SAUNDERS, CHAIRMAN: You say the information is already on the record?

MS. GREENE, Q.C.: Oh, Mr. Downton just gave it.

MR. SAUNDERS, CHAIRMAN: Yeah, but he referred ...

MS. GREENE, Q.C.: In terms of the information, and if Mr. Hutchings would like additional time to review it, or if he would like to ask Mr. Downton additional questions to explain how it was prepared, that's fine.

MR. HUTCHINGS, Q.C.: I mean I just got the impression that Mr. Downton was looking at a document that we hadn't seen.

MR. SAUNDERS, CHAIRMAN: So did I.

MR. HUTCHINGS, Q.C.: And that's what I was ...

MR. DOWNTON: I'm not looking at a document. I know basically that those are the costs.

MR. HUTCHINGS, Q.C.: Okay, I take it you have that, someone has reported that to you in a written form?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, and is there a problem with us seeing that, Mr. Chair?

MS. GREENE, Q.C.: No, in terms of, I guess, what the additional time that Mr. Hutchings would like to prepare ... we will have it available during the break.

MR. HUTCHINGS, Q.C.: If we can get it over lunch and, you know, it may be that I won't have any other questions after I see this thing, or it may ...

MS. GREENE, Q.C.: And I guess all I was trying to point out is Mr. Downton is the person to answer those questions today.

MR. HUTCHINGS, Q.C.: Oh yes, I don't intend to delay Mr. Downton or ...

MR. SAUNDERS, CHAIRMAN: So Mr. Downton will be able to bring that forward after lunch?

MR. DOWNTON: Yes.

MS. GREENE, Q.C.: Yes, we certainly will have a look at it, Mr. Chair.

MR. SAUNDERS, CHAIRMAN: Carry on, Mr. Hutchings.

MR. HUTCHINGS, Q.C.: Thank you, Mr. Chair. Okay, moving on, Mr. Downton, to the end user and server evergreen program at B-101. The project justification for this item as it appears on page B-103 specifically, it shows three different options with projected spending through 2007. Do I assume correctly that those are actual dollars in the years in question?

MR. DOWNTON: Those are what we are, at this point, projecting the costs to be to replace the end user infrastructure.

MR. HUTCHINGS, Q.C.: Okay.

MR. DOWNTON: Looking at option one, two, and three on page 103.

MR. HUTCHINGS, Q.C.: Yeah, uh hum.

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Have you done any net present value calculation over those numbers?

MR. DOWNTON: No.

MR. HUTCHINGS, Q.C.: Okay, would it be possible for you to do that using Hydro's projected cost of capital in each of the years in question?

MR. DOWNTON: I guess I really can't say no, but I'm not sure what advantage there is to do it.

MR. HUTCHINGS, Q.C.: Well, the results that you have there now show a price advantage to option two, correct?

MR. DOWNTON: Yes, and that's just on the capital acquisition and installation costs, if you want to call it that.

MR. HUTCHINGS, Q.C.: Yes, but option two is heavily weighted in years one and two, whereas option one is pretty well even over the piece, isn't it?

MR. DOWNTON: Option one?

MR. HUTCHINGS, Q.C.: Yes.

MR. DOWNTON: Yes, what it doesn't show is that option two will significantly reduce our administrative costs.

MR. HUTCHINGS, Q.C.: Okay.

MR. DOWNTON: And basically option one will not support our strategy of having an infrastructure which will integrate with JD Edwards.

MR. HUTCHINGS, Q.C.: Okay, but I mean this is your table that you've produced, and I'm suggesting to you it's going to be useful for us in terms of evaluating this information, if we have a net present value calculation, so if you can do that ...

MR. DOWNTON: I'm not trying to be belligerent, but I'm not sure what advantage there is to doing net present value because option two really is what, is where we need to go to support our infrastructure, and to reduce costs. I guess what I'm looking at there over a three year period, the capital acquisition costs, yes, are more or less the same.

MR. HUTCHINGS, Q.C.: Now, in your project justification you've included this table, I mean do you want to take it out and say that's no part of the justification, or is it part of the justification?

MR. DOWNTON: I guess why we put it there is to show you that there is very little difference between option one, two, and three, as far as what the capital costs are.

MR. HUTCHINGS, Q.C.: **Okay, I'd like an undertaking to have a net present value calculation done on those figures, Mr. Chairman. I think it's going to give a better comparison of the respective capital costs.**

MR. HAYNES: If I could interject, if you want to take a net present value analysis for the project, it would entail going back and reviewing the operating costs, it would not be done in a day. It's going to take a ... you know, you'd have to go back and review all the other potential savings that are there. It's not something that could be turned around ... I don't even think it could be turned around overnight, and I agree with Mr. Downton, from the point of view of the overall costs, they are marginally different at the end of the day but it does not support where we're going, and the difference in costs in the first couple of years, there's a couple of hundred thousand dollars difference. It may or may not come out to be, it may be a moot point at the end of the day.

MR. SAUNDERS, CHAIRMAN: Maybe I misunderstood somebody, but did you say, Mr. Downton, that option one wasn't really an option in that ...

MR. DOWNTON: Well, it's there, I mean with regards to supporting Hydro's future infrastructure and from where, and reducing costs and ...

MR. SAUNDERS, CHAIRMAN: And that's what we've been talking about all morning.

MR. DOWNTON: And integrating, option two really is the ...

MR. SAUNDERS, CHAIRMAN: Is the only way to go.

MR. DOWNTON: It's the only way to go.

MR. SAUNDERS, CHAIRMAN: Well, why was it you said option one wasn't acceptable? Would you want to repeat that?

MR. DOWNTON: Because option one really doesn't support the cost reduction and doesn't support our future direction with regards to integrating with JD Edwards.

MR. SAUNDERS, CHAIRMAN: So why is it labelled an option here? Is it really an option from where you stand today and where you want to be in five to ten years time?

MR. DOWNTON: No, where I want to be next year is basically option two so I can start to see a reduction in costs, operational costs immediately.

MR. SAUNDERS, CHAIRMAN: Okay, I thought I'd get that point cleared up because I wasn't sure exactly what it was you said in connection with option one. Now the difficulty in coming up with the net present value calculation, you say it's something that won't be, or can't be done quickly.

MR. DOWNTON: It will take me a while to go back and look at operational costs.

MR. SAUNDERS, CHAIRMAN: In light of what he said about option one, Mr. Hutchings, what's the advantage of having it done?

MR. HUTCHINGS, Q.C.: Well, Mr. Chair, I guess in my mind, I don't know whether you reached the same conclusion, he has basically said that option one is not an option anyway.

MR. SAUNDERS, CHAIRMAN: It's not on the table.

MR. HUTCHINGS, Q.C.: It's not on the table, so I guess we get back to the question of whether or not what is before the Board justifies option two no matter what it costs.

MR. SAUNDERS, CHAIRMAN: That's where I think we are.

MR. HUTCHINGS, Q.C.: We can carry on on that basis.

MR. SAUNDERS, CHAIRMAN: Okay.

(12:15 p.m.)

MR. HUTCHINGS, Q.C.: My understanding in respect of this project is that you are projecting savings as a result of moving to option two. What are your projections for those savings in 2003 and 2004?

MR. DOWNTON: Basically what we are, what we've already committed to do internally is to reduce our support staff for the field and Hydro Place infrastructures.

MR. HUTCHINGS, Q.C.: Okay, and how many dollars is that going to save?

MR. DOWNTON: We've eliminated three positions now which we'll, I'm not sure what the loaded cost would be but somewhere in the order of maybe about, say, $50,000 per position, so maybe about $150,000.

MR. HUTCHINGS, Q.C.: You say that has already been done or ..

MR. DOWNTON: Well, basically people have been given their notice as part of what we did, the action that we took last week, and the fact that I have some terms that have been given notice at the end of the year.

MR. HUTCHINGS, Q.C.: Okay, so will there be additional savings, those presumably will be savings in 2002, well, no, if they're here to the end of the year, there won't be any savings in 2002, they'll be savings in 2003?

MR. DOWNTON: That's right.

MR. HUTCHINGS, Q.C.: And anything additional to that in 2004?

MR. DOWNTON: We basically see, as the infrastructure, the thin client infrastructure will hit mostly outside of Hydro Place in 2003. In 2004 it will be done in the part of Hydro Place and Bishops Falls, and then in 2005, the remainder of Hydro Place will be done, so we will continue to look at savings in those areas.

MR. HUTCHINGS, Q.C.: And have you attempted to quantify those savings?

MR. DOWNTON: We have attempted to quantify them in generic terms, but it more or less relates to standards that we get from, we'll say IT analysis that's done, but I guess the question is is how you translate those numbers into definitive numbers for Hydro, so right now we are just looking at what I consider to be a 25 percent savings in that area.

MR. HUTCHINGS, Q.C.: 25 percent of what?

MR. DOWNTON: Of basically the support costs for the end user infrastructure.

MR. HUTCHINGS, Q.C.: And do you have any ballpark notion of what that number is?

MR. DOWNTON: I don't have that number, no.

MR. HUTCHINGS, Q.C.: And when you say support costs, are these people primarily?

MR. DOWNTON: The primary focus area will be productivity, yes.

MR. HUTCHINGS, Q.C.: Okay, do we have a projected number of full-time equivalents to be eliminated?

MR. DOWNTON: Right now we've dealt with, I guess, the number that we are comfortable with. On a go forward basis we will reassess in 2003 and 2004.

MR. HUTCHINGS, Q.C.: Okay, what are your current projections for 2004 and 2005?

MR. DOWNTON: I don't have those definitive, no. We are assessing next year on what we know we can do with the field area, and we've taken action on that, and as we get into what we're going to do for 2004, we'll reassess that again in 2003.

MR. HUTCHINGS, Q.C.: So your evidence is that you're saving essentially three full-time equivalents in 2003, and we don't know what's going to happen beyond that.

MR. DOWNTON: Well, basically we need to reassess to see if the technology is going to bring the savings that we are led to believe it will bring.

MR. HUTCHINGS, Q.C.: Okay, the project references categories one, two and three, users. How many users are in each of these categories?

MR. DOWNTON: We've just categorized them, approximately as one third, one third, and one third.

MR. HUTCHINGS, Q.C.: And what's the total number of users?

MR. DOWNTON: There's 765 end users.

MR. HUTCHINGS, Q.C.: Okay, and is there a work station for each end user?

MR. DOWNTON: There's not a work station for each employee.

MR. HUTCHINGS, Q.C.: No.

MR. DOWNTON: But there is a work station, if you want to call it that, or thin client ... there is something for every one who need some.

MR. HUTCHINGS, Q.C.: Okay, and the 765 end users, that's not all your employees, those are people who need one.

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Yeah, okay, moving on to B-105, we've referred to this peripherally earlier.

MR. DOWNTON: I would just like, if it's not inappropriate, I would also like to add something to that particular program. What we didn't focus on is the fact that as part of that program we will also start to do server consolidation, and basically that will save us direct costs in reduction in the number of servers that we would normally purchase.

MR. HUTCHINGS, Q.C.: My questions might have been misunderstood, but I was intending to ask you about all the savings that would accrue in 2003 and 2004, are there savings associated with server consolidation in those years?

MR. DOWNTON: Well, basically over the ... well even though we're only dealing with 2002, we are also ... we're really not looking to see server savings in 2002, but on a go forward basis, this is the beginning of server consolidation as well.

MR. HUTCHINGS, Q.C.: Have you quantified those savings at all?

MR. DOWNTON: We quantify that from where we are now to where we will be, say, in four years time, through the evergreening process, we will save somewhere in an order of about $400,000 in direct costs from reducing the number of server farms from twelve to four.

MR. HUTCHINGS, Q.C.: Reducing the server farms?

MR. DOWNTON: Another (inaudible) terminology. We basically have servers located, what we call server farms, or multiple servers located in our area offices and regional offices, there are twelve.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: We will be reducing that down to a quantity of four over that period of years.

MR. HUTCHINGS, Q.C.: Okay, alright.

MR. SAUNDERS, CHAIRMAN: A good time to break, Mr. Hutchings?

MR. HUTCHINGS, Q.C.: Yes, I had hoped to finish before lunch but I do have a few other questions, so we should be able to clue up pretty quickly after lunch.

MR. SAUNDERS, CHAIRMAN: We will resume at 2:00.

(break)

(2:00 p.m.)

MR. SAUNDERS, CHAIRMAN: Good afternoon. Any preliminary matters?

MS. NEWMAN: Mr. Chair, I understand that Newfoundland Hydro has some documentation that it wishes to file in response to requests for information or an undertaking earlier today.

MR. SAUNDERS, CHAIRMAN: Okay.

MS. GREENE, Q.C.: Yes, thank you, we have copies of the documentation that was referred to by Mr. Downton relating to the savings ... it's called Enterprise Management System or SAN, it's been used interchangeably, so this is the documentation that he referred to. I have copies available for the panel and I gave a copy to counsel for Industrial Customers just before 2:00, so I do have additional copies for the panel. The other undertakings are outstanding questions from yesterday. If it's acceptable to Board Counsel and Counsel for Industrial Customers and the panel, I will

do that at redirect in case there are others arising, but we are in a position to respond to the three or four questions that were left outstanding from yesterday.

MR. SAUNDERS, CHAIRMAN: You're going to do that now, or are you going to ...

MS. GREENE, Q.C.: I would do it, but I don't ... I use redirect as the opportunity to do that. As I said before, it's not strictly speaking redirect, and that also gives me, if there's more arising from this afternoon, hopefully I will be able to address them all at the one time.

MR. SAUNDERS, CHAIRMAN: Okay, is that suitable with you, Mr. Hutchings?

MR. HUTCHINGS, Q.C.: I have no problem with that, Mr. Chair.

MR. SAUNDERS, CHAIRMAN: Are you ready to continue?

MR. HUTCHINGS, Q.C.: Yes, are we going to mark this as an exhibit?

MS. NEWMAN: That will be, I guess, ED-1.

EXHIBIT ED-1 ENTERED

MR. HUTCHINGS, Q.C.: Mr. Downton, just looking at ED-1, I think most of it is fairly straightforward for us. The hardware maintenance costs, you say as disk space increases by 20 percent, maintenance costs will increase appropriately. What do the maintenance costs actually represent?

MR. DOWNTON: Basically maintenance costs represent the maintenance activities that IBM perform on our infrastructure, so as the size of the disk increases, the maintenance costs from IBM will increase as well.

MR. HUTCHINGS, Q.C.: Okay, so that's just a flat fee percentage type of thing that IBM charges you.

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, that's fine. The assumptions at the bottom, I take it these apply to both scenarios?

MR. DOWNTON: No, they apply to the bottom one, which is the enterprise storage network.

MR. HUTCHINGS, Q.C.: Okay, just so that I can understand, you're saying in each case, 60 percent of all disk space is replaced due to servers being replaced.

MR. DOWNTON: Okay, what that ... to clarify that, we basically will be replacing our server infrastructure over time, so what this is saying, in 2004, when we replace the servers that are, we'll say allocated to be replaced in 2004, that we will only replace 60 percent of the disk space that is on those servers, and the reason we specify 60 percent is because the SAN technology gives you better management facilities, and it's more efficient, so we will only replace 60 percent as opposed to 100 percent, and that applies for 2007 and 2009 as well.

MR. HUTCHINGS, Q.C.: Okay, so at the end of the piece you end up with less disk space than you had initially?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, alright, just looking over to your second page on the enterprise storage infrastructure, I notice that in specifically 2004 and 2009, under the capital costs under individual storage ...

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: There are large numbers there, one almost $1 million, and one over $1 million, why do those numbers pop up there?

MR. DOWNTON: Because those are, again, that's part of our server infrastructure replacement program. They basically will replace those servers, we will be replacing the disk as well.

MR. HUTCHINGS, Q.C.: Okay, so these are ... so whichever, whichever system you use you will be replacing servers in 2004, 2007 and 2009?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, so the effect of implementing the ESS storage infrastructure in 2003 is basically that you're replacing servers a year early, is that right?

MR. DOWNTON: Well, in 2003 we have to replace, there is a server to be replaced anyway.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. DOWNTON: So I guess what we are saying is that we should start the program at that time, if we're going to maximize our savings.

MR. HUTCHINGS, Q.C.: Okay, but I mean in the first year of the program, the individual storage is preferred by over a $1 million, there's a savings of $1 million for the first year.

MR. DOWNTON: That's right.

MR. HUTCHINGS, Q.C.: By not implementing the program, right?

MR. DOWNTON: Yes, yes.

MR. HUTCHINGS, Q.C.: Okay, and your plan anyway would be to spend almost $1 million in server replacement in 2004?

MR. DOWNTON: You mean over in the individual storage section?

MR. HUTCHINGS, Q.C.: Yes.

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, and under this scenario the SAN starts to pay for itself in the year 2008, is that right?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, do you think the technology will have evolved to something different by that time?

MR. DOWNTON: It's ... I guess to use the word evolve ... the enterprise storage network infrastructure is, we'll say relatively new and mature, so we basically do expect it to be around for at least seven to ten years, and that's the indication we get from IBM.

MR. HUTCHINGS, Q.C.: Okay, and to improve over that time presumably, and be improved?

MR. DOWNTON: Basically, well basically when you put in the actual SAN, it is a storage unit that you just keep filling, so you are just committing to a particular technology at that time.

MR. HUTCHINGS, Q.C.: Okay, alright, if we can look for a moment at B-105. This is the peripheral infrastructure replacement and the project justification refers to a five year replacement program. When did that begin and when is it due to end?

MR. DOWNTON: Basically we keep ... one second now. Basically we are continually refreshing the peripherals which basically includes some printers, and basically projectors and scanners, so I mean basically the shelf life for these units are typically a maximum of five years anyway, so we're just continually refreshing some of these peripheral devices.

MR. HUTCHINGS, Q.C.: So the five year replacement program, I mean this is really almost an annual allotment, is it?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Effectively.

MR. DOWNTON: If you go back and look at previous capital budgets, you will basically see that.

MR. HUTCHINGS, Q.C.: Okay, now how many printers were taking out of this plan as a result of the comment in the IT structure about you being over supplied with printers?

MR. DOWNTON: I don't have the exact number.

MR. HUTCHINGS, Q.C.: Okay, how many printers altogether are in this project, do you know?

MR. DOWNTON: I don't know the definitive number, I don't have that here.

MR. HUTCHINGS, Q.C.: Alright, I mean do you have a rough idea?

MR. DOWNTON: No, to be honest. I have a rough idea maybe on some of the others, but not on the printers.

MR. HUTCHINGS, Q.C.: Okay, do you have a rough idea of how many printers are in the organization?

MR. DOWNTON: The last ... I think we had around 100 printers.

MR. HUTCHINGS, Q.C.: 100 printers, that's in all the offices together?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Yeah, okay, and what about the projectors and scanners, roughly how many are we talking about?

MR. DOWNTON: Typically we have one projector per area office, and at Hydro Place we have probably six.

MR. HUTCHINGS, Q.C.: Okay, so we're talking maybe a dozen in total?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Okay, what about scanners, a similar number?

MR. DOWNTON: I don't know, I really don't know.

MR. HUTCHINGS, Q.C.: Alright, I didn't notice any comment in the IT structure plan on projectors and scanners, I mean given their comment on the printers, did you scrutinize the requirement for projectors and scanners as well?

MR. DOWNTON: Well, basically the ... we have, we do scrutinize it and we'll basically just be replacing the projectors which basically don't meet the requirements anymore. As far as the scanners are concerned, we have integrated scanning into a lot of what we call multi-functional devices, so these also serve as printers and copiers and scanners, so basically we're only replacing the scanners which are over and above what our multi-functional devices provide, so we basically are looking at scanners and also the printers.

MR. HUTCHINGS, Q.C.: Under the heading of peripherals, does Hydro provide any hand-held devices such as Palm Pilots?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: How many of those would be in the organization?

MR. DOWNTON: I don't know, I don't know the exact quantity.

MR. HUTCHINGS, Q.C.: Okay, and I take it there's none of those being replaced at this point, is there?

MR. DOWNTON: Not in here.

MR. HUTCHINGS, Q.C.: Okay, can we look briefly at B-111? I note that in the project justification you say there are no known third party sources for parts or repairs for this voice data teleprotection equipment and fiberoptic cable. Does Hydro have a stock of its own parts at this point?

MR. DOWNTON: Just one second please. The way I read this is that there are no spares, there are no other modules outside of what's in service, that's my understanding of what this means.

MR. HUTCHINGS, Q.C.: Okay, so when you say there are no known third party sources for parts and repairs, what you intended to say was there are no sources for parts and repairs.

MR. DOWNTON: That's right.

MR. HUTCHINGS, Q.C.: Okay, what would the effect be of deferring this project for a year?

MR. DOWNTON: Well, basically this system carries the data from the intake at Upper Salmon down to the power plant, which basically then it's brought into the Energy Control Centre, and it also provides teleprotection that's used to shut the gate in case of a unit outage, or in the case if we get (inaudible) ice on the intake racks, it will also trip the plant so to defer this and for this system to fail it could compromise the production from the plant.

MR. HUTCHINGS, Q.C.: But there has been no failure in the system up to this point, has there?

MR. DOWNTON: Basically, as it is indicated here, this used to be a redundant configuration, and it has been reduced to that.

MR. HUTCHINGS, Q.C.: Yeah, yeah.

MR. DOWNTON: That is the only known failure that we can find in our records.

MR. HUTCHINGS, Q.C.: Yeah, so that, that equipment failure was in July of 2002?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: And are there spare parts available from the redundant piece of equipment?

MR. DOWNTON: Basically the fact that it's reduced to a nonredundant configuration, basically I would interpret from that that basically there's only spares to support one side of the equipment, and basically you would not have a complete set of spares.

MR. HAYNES: From a generator point of view the powerhouse has to be in contact with the intake. Under certain things you will have to close the intake gate under emergency conditions to reduce damage or to eliminate damage in the powerhouse. The redundancy is critical, I would say, between the powerhouse and the intake to protect the powerhouse equipment.

MR. HUTCHINGS, Q.C.: So the project here is to basically make the existing system redundant again?

MR. DOWNTON: No, well basically to replace the existing equipment with new equipment.

MR. HUTCHINGS, Q.C.: But will that be a redundancy then, will it?

MR. DOWNTON: Well, yes, we will replace it with equipment which will give you the same reliability that this equipment gave.

MR. HUTCHINGS, Q.C.: When it was redundant.

MR. DOWNTON: When it was redundant.

MR. HUTCHINGS, Q.C.: Okay, alright, looking over to B-113, we're talking about battery systems in five separate sites here. I noticed that in the TRO area when they were talking about replacing some battery banks at P-44, there was a specific test apparently to show that there was 15 to 20 percent reduction in the battery cell capacity. Do you know if there was any similar test done in respect of any of these battery banks?

MR. DOWNTON: I do not know for sure.

MR. HUTCHINGS, Q.C.: Okay, so we don't know if the efficiency of these has actually been reduced?

MR. DOWNTON: Well, based on the fact that, I think what it says here is that all the tests, all the tests confirm the natural expected degradation (inaudible) for these type of batteries. It should be noted that maintenance procedures and their costs will not be (inaudible) affected by the installation, so from that, it's saying to me that, yes, there were tests done and that the battery banks had degraded naturally as well, and the expected life of a flooded cell is 20 years, and these units are 20 years old.

MR. HUTCHINGS, Q.C.: Okay, is there any reason why all five systems have to be done at once, or is there any advantage to doing them all at once?

MR. DOWNTON: Well, basically we get better pricing from manufacturers by doing a bulk purchase, but at the same time, all five of them are 20 years old.

MR. HUTCHINGS, Q.C.: Are these basically the same flooded cell types that are referred to at page B-44?

MR. DOWNTON: B-44?

MR. HUTCHINGS, Q.C.: Yeah, I realize that's not in your area but they're talking about lead calcium flooded cell type batteries.

MR. DOWNTON: Could you repeat the question please?

MR. HUTCHINGS, Q.C.: Are these the same type of batteries that we're talking about here in both projects?

MR. DOWNTON: They're flooded cell technology, that's right, but I don't know if they're the exact same type of battery.

MR. HUTCHINGS, Q.C.: So you haven't looked into whether or not there's any bulk buy opportunities as between the two divisions?

MR. DOWNTON: We've already discussed that at our meetings to look at bulk purchase of different styles of batteries and rectifiers through one company.

MR. HUTCHINGS, Q.C.: Okay, but you just don't ...

(2:15 p.m.)

MR. DOWNTON: But more so for the battery systems.

MR. HUTCHINGS, Q.C.: Okay, alright.

MR. HAYNES: That item was discussed in our preparation of the capital budget for 2003. There are two or three groups that were put forth, batteries and battery chargers and so on, and we did discuss at that time that when we do go to tender, we should look at and see if we can integrate and go out with one tender to capitalize on any savings, but that would be done, you know, through the year and it's an outstanding issue.

MR. HUTCHINGS, Q.C.: Okay, I take it the numbers that we have for both these projects don't make any assumption about any savings?

MR. DOWNTON: Well, they were based on five for IS and T and I guess the three or so for TRO. There may be savings but they will be sure to be covered within the contingency amounts, I'm sure.

MR. HUTCHINGS, Q.C.: If we can look briefly at B-115? This is referred to as phase four of a nine phase plan to replace all the obsolete RTUs. I take it you're regarding each of these nine phases as a separate capital project, and there doesn't seem to be any ...

MR. DOWNTON: Yes, that's correct.

MR. HUTCHINGS, Q.C.: ... provision for future years there. And how do you prioritize which of the RTUs are going to be replaced at any given year?

MR. DOWNTON: We basically, just we prioritize them by the age of the equipment and that is pretty much the driving force. The original RTUs that were installed were Quindar and Westronic *(phonetic)* RTUs, and neither one of those companies still support these RTUs in any fashion.

MR. HUTCHINGS, Q.C.: Okay, the justification said the equipment is nearing the end of its useful life. When will it reach the end of its useful life?

MR. DOWNTON: That's difficult to say. Basically typical life expectancy for this equipment is 15 to 20 years.

MR. HUTCHINGS, Q.C.: Okay, and apparently your experience is that these can last more than 20 years?

MR. DOWNTON: There's moving parts in these RTUs and that is my concern.

MR. HUTCHINGS, Q.C.: Okay, so in terms of timing, it's purely a question of risk assessment whether these have to be done this year, next year, the following year?

MR. DOWNTON: Yes, it's based on what we feel is proper judgement and risk.

MR. HUTCHINGS, Q.C.: Okay, how many of these units will be replaced over the nine phases?

MR. DOWNTON: I think we have some in the order of, all total ... I'd have to go back and check the exact numbers, but we have approximately 30 to 35 RTUs and I'm not sure what portion of those are 20 years old. I would suspect that it's probably in the order of at least 20 that are, right now, 20 years old, or had been 20 years old in previous years.

MR. HUTCHINGS, Q.C.: And do you know how many were replaced in the first three phases?

MR. DOWNTON: I don't have that number with me, no.

MR. HUTCHINGS, Q.C.: In respect to these RTUs in response to PUB-8, you indicated that you standardized on GE line because of the need to interface with the Harris protocol?

MR. DOWNTON: Yes.

MR. HUTCHINGS, Q.C.: Under your plans, assuming that the Board approves them, how long will the Harris protocol be required to be dealt with?

MR. DOWNTON: Well, the Harris protocol has to be dealt with at least up until 2006, we'll say 2007.

MR. HUTCHINGS, Q.C.: Okay, the IT plan that we looked at earlier talked about this having to be dealt with until 2005?

MR. DOWNTON: Yeah, well basically at the end of 2005 is when the EMS is scheduled to go in service, so I say 2006, 2007, because you don't want to go and start making changes immediately as the system goes into service, so I would look at probably at least a year wait before any of the work was done.

MR. HUTCHINGS, Q.C.: Okay, thank you, Mr. Downton and Mr. Haynes, those are all the questions I have, Mr. Chair.

MR. SAUNDERS, CHAIRMAN: Thank you, Mr. Hutchings. Ms. Newman?

MS. NEWMAN: Yes, I have two general issues that I'll address first, and then a couple, I think it's about four specific projects that I'll refer to. I'll leave it to the panel's judgement as to who is best to answer the questions, although I suspect that Mr. Haynes is probably going to answer most of my questions, and probably the first one as well. I'm wondering if you can confirm for us what Hydro is looking for approval of in terms of the projects? We've had some discussion about this to date, but I understand that it is just the projects for 2003 and not the future years that you are seeking approval of today?

MR. HAYNES: That's correct.

MS. NEWMAN: So I just, in that line I want to just clarify everybody's understanding, and so we'll go to a few examples. How about we start at B-13? So that's to replace the gate hoist number two at Ebbe.

MR. HAYNES: Yes.

MS. NEWMAN: And for 2003 the cost estimate for this project is $6,600.

MR. HAYNES: Yes.

MS. NEWMAN: So Hydro would be seeking approval for the expenditure of $6,600 in 2003.

MR. HAYNES: Yes.

MS. NEWMAN: And then will be back to seek approval in 2004 to proceed with the remainder of the project, is that correct?

MR. HAYNES: Yes, that's correct. What will be done in 2003 is the engineering design, it would be just finalizing those details, and we may well go to tender, and it will be replaced hopefully after, well after the hearing next year on capital. That would be the normal route that we would take.

MS. NEWMAN: I want to refer to B-91, and that's the Energy Management System.

MR. HAYNES: That's a tough one.

MS. NEWMAN: Yes, indeed. So in 2003, Hydro has projected, I think, that it will do some engineering work and do some preliminary work.

MR. HAYNES: Yes.

MS. NEWMAN: And the cost of that would be $1.2 million approximately.

MR. HAYNES: Yes.

MS. NEWMAN: So Hydro will be looking for approval of that expenditure in this year and to proceed with the project to that extent, but I noticed in the details of the project, the estimation is that a contract would be entered into in 2003. You can refer to, for clarification of this, you can refer to Section G at Tab 5, page 8-2, so we're at Section G, Tab 5, page 8-2.

MR. HAYNES: Before we even get there, on a project of this nature, on a project such as the Ebbegumgaeg gates and some of the other equipment, it is very easy to stop at the end of the ... you've done the engineering thing, you may have gone to tender. When you get into some of these larger multi-year projects, like this or Granite Canal, had it gone through the Board, you do, as Mr. Hutchings had indicated earlier today, I guess, regarding ... you get beyond the point of no return. You can still stop, but we will have stranded costs or stranded assets that will be of no use to the corporation. You do get to the point where you've committed, and we do have to come back to the Board, and there may be refinements in the costs, that may go up or down or hopefully stay the same or less, but you do have to come back to the Board for approval to spend. However, we do enter a contract, and I'm not quite sure how the contractual language goes, but if the Board were to, for instance, between 2004, turn down the 2005 funds, we would have an unfinished project and will have spent in the order of $6.5 million which would be of no value.

MS. NEWMAN: So 8-2 where it is suggested that Hydro would enter into the contract during 2003, that has not changed, that is an accurate ...

MR. HAYNES: I'll have to defer ... I expect that we will be looking to enter the contract sometime in 2003.

MR. DOWNTON: Yes, towards ...

MR. HAYNES: Towards the latter part.

MR. DOWNTON: The KEMA report is written by a consultant that's probably not really aware of, I guess, our requirement to go to the Public Utilities Board for approvals, and really the intent was in 2003 to do the functional specification and do the, go to tender and basically do the actual selection of the, we'll say the preferred vendor, and basically at the end of 2003, if approved by the Public Utilities Board, to proceed, and we will proceed on that behalf.

MS. NEWMAN: Okay, so Hydro wouldn't enter into a contract without approval of the Board then.

MR. DOWNTON: That is not the intent, we would not be able to enter into a contract without the approval of the Board.

MS. NEWMAN: I wanted to get some clarification on the details in the project cost sections in general again, so we can go to B-20 as an example. I'm looking at the project which is the replacement of a loader or backhoe?

MR. HAYNES: Yes.

MS. NEWMAN: And I note in 2003 there is expenditures of $3,000 on engineering. The first question I ask is these project costs, and it's specifically engineering, could that include in-house costs as well as costs charged to Hydro by an external consultant?

MR. HAYNES: I doubt very much that there would be any change from an external consultant. It would primarily be internal costs.

MS. NEWMAN: Okay.

MR. HAYNES: Of the people in Bishops Falls and fleet who would actually spend time, you know, preparing the specification or doing the research to fully define the piece of equipment to be replaced.

MS. NEWMAN: Okay, so in this case the $3,000 would refer mainly to specifications?

MR. HAYNES: Internal costs ... the preparation of specifications.

MS. NEWMAN: Okay.

MR. HAYNES: We would open up a capital job cost and basically we would accrue the time spent by whomever to prepare that spec.

MS. NEWMAN: Well, I would expect that in most projects there would be some engineering expenditures if there's going to be specifications drawn up, it would always go under engineering, is that ...

MR. HAYNES: When we prepare capital budgets, generally speaking, when we, when somebody does up an estimate for a project which is not approved, the time will go into just the general cost. For instance, an engineering, a generation engineer (inaudible), they will ... it's an operating cost, they will absorb the cost. If it's a significant amount, they may keep track of that cost in the event that it does get ultimately approved by the PUB and will be transferred. For this particular one, if this gets approved by the PUB then basically somebody in 2003 will open up the capital job cost and any time spent working on that particular project they will account for it, but there will be no orders done. Most of the small dollar lead numbers are internal costs. Occasionally there may be external costs of a consultant, if it's a specialty expertise that we don't have inhouse.

MS. NEWMAN: So there are some projects here where there's no engineering costs, and I was just wondering why that would be. I can give you a couple of examples if you want to look at them specifically.

MR. HAYNES: Yes please.

MS. NEWMAN: B-68.

MR. HAYNES: Now that one's in TRO.

MS. NEWMAN: There's a couple more here, B-105, if you're more comfortable in looking at that one.

MR. HAYNES: There's no engineering cost. There's an internal labour cost, but I don't know how much ... that's an IS and T area, and I suspect that they'll go out and do a lot of engineering when they're going to go out and buy a Xerox, Hewlett Packard, whatever, whatever printer.

(2:30 p.m.)

MS. NEWMAN: Do you have any comment, Mr. Downton?

MR. DOWNTON: Yeah, typically for that type of device, we would not go and spend time writing a detailed specification, so we really wouldn't get into charging, I'll say, quote, unquote, engineering time against it.

MS. NEWMAN: Okay, I'm looking at B-119, and Mr. Haynes you may answer this one, I'm not sure. It's Deer Lake building improvements, and there's no engineering on that one.

MS. HENLEY ANDREWS: What page number was that?

MS. NEWMAN: B-119.

MR. HAYNES: B-119. Well, I would suggest there should be. I would suggest there should be, but maybe, it may be wrapped up in, the individual who did the estimate may have put it in labour, possibly put it in labour.

MR. DOWNTON: Yeah, that's the cost ...

MR. HAYNES: They've included project management.

MR. DOWNTON: Sorry, I didn't mean to jump in. That's the cost that I got from our services group in Bishops Falls.

MS. NEWMAN: Okay.

MR. DOWNTON: So I'm basically assuming that whatever the labour/engineering basically is in that estimate.

MS. NEWMAN: So there's some, it sounds like a little bit of judgement there as to whether there would, in fact, be a specifically assigned cost and where it might go in some instances.

MR. HAYNES: Yes, with any internal engineering that would be used to do that particular building, it would be charged to the capital work order.

MR. DOWNTON: Yes.

MR. HAYNES: It would not be absorbed in operations, that would not be the normal way we do it.

MS. NEWMAN: Okay, alright, those are the two general areas that I wanted to hit, now I'll refer back to B-20, back to the specific projects. In B-20 there's reference to corrective maintenance, this is under operating experience.

MR. HAYNES: Yes.

MS. NEWMAN: Corrective maintenance, preventative maintenance and routine maintenance, I wonder if you could give us a short description of the difference between those?

MR. HAYNES: Preventative maintenance would be changing the oil and changing the antifreeze or doing things like that. Corrective maintenance means they fix something that's broken, you know, if something needed to be welded or something needed to be replaced. Routine maintenance, I would suggest would be more just the very, very small amount of money that's spent by people just, not changing the oil, but just maybe ... I'm stumbling there. The routine maintenance would be very, very minor. Preventative maintenance, I'm not quite sure if they would put changing the oil under routine or preventative, I'm not quite sure where they would do that. But between routine and preventative, I don't make much distinction. The corrective one is the breakdown maintenance. Something is broken and it has to be fixed.

MS. NEWMAN: I'll refer you to B-32 and PUB-3 to the extent that you need to refer to that.

MR. HAYNES: Sorry, B-32 and ...

MS. NEWMAN: PUB-3.

MR. HAYNES: Okay.

MS. NEWMAN: We had some detailed discussions about this item already so I just propose to ask a couple of questions that I didn't have answered through the process you went through with the intervenor. The first one is, you mentioned that there is a possibility of failure if this liner is not replaced.

MR. HAYNES: Yes.

MS. NEWMAN: In the reports there doesn't seem to be anywhere in here of quantification of that possibility. Is there any way that it can be quantified?

MR. HAYNES: Not really, basically the report indicates that the, when the stack was installed 32 or 33 years

ago, that right now it's, for the most part there's 60 percent of the metal left, 40 percent is already gone, and in some areas it's down to 40 percent remaining, so basically the walls are thinning. You know, for someone to come in and give a prediction of when it's actually going to collapse or ... and even if it will collapse ... it may buckle, it may not cause a complete collapse, I think it would be impossible to speculate or to be able to pinpoint a probability.

MS. NEWMAN: Is this a structure that is fairly common to the industry? I'm wondering is there any way to have a general guide as to how long these liners usually last.

MR. HAYNES: That's very dependent on the operating environment. The stack itself is 302 feet tall, and basically it has a steel liner so it's old ... inside the concrete shell there's a steel liner from the bottom, or I'll say from 15 feet off the ground, it starts, to the top. The amount of deterioration depends on the usage and also the environment. That is a salt environment, it's (inaudible) steel, so I think it would depend on the installation and we have a fair bit of up/down time in Holyrood, we are shut down ... we were shut down a lot in the summer one time, we're operating some machines now all summer, nearly all summer, so it's quite variable.

MS. NEWMAN: I'd like to look at page 5 of 9 in PUB-3.

MR. HAYNES: Okay.

MS. NEWMAN: We're back at that table again, option one, option two, option three.

MR. HAYNES: Yes.

MS. NEWMAN: My first question on that table is under option one, the O and M costs are recorded as being $70,000 a year?

MR. HAYNES: Yes.

MS. NEWMAN: I wonder is that accurate or should they change in the same way that it does under option two?

MR. HAYNES: No, option one is basically each year we do an inspection and we do the minimal repair. Option two, we do a bit more than minimal repair. We go and we go a little deeper. Like last year, I think it was $130,000 odd that we spent. Basically we only replaced a minimum amount that had to be done to make sure we got through one more year. Option two does a little bit more. We do some reinforcement as well.

MS. NEWMAN: So that $70,000 a year will stay constant right through to the end of the estimated life of this ...

MR. HAYNES: Well, it would escalate, in the present day analysis that would be done, that would be escalated each year.

MS. NEWMAN: And is that included in the present value analysis on the table, which is at page 8 of 9?

MR. HAYNES: Yes, it should be.

MS. NEWMAN: That O and M cost.

MR. HAYNES: That should have been escalated at two percent per year. If you look at 2004, there's $73,500.

MS. NEWMAN: Right.

MR. HAYNES: And then in 2006, I presume they estimated, for some reason it went up a little bit higher, and that may ... well that would be, I guess, in the ... that may be reflecting what we've had the last couple of years. Last year, we spent, I believe, $136,000, but generally those numbers are $73,000 escalated each year at an average of two percent inflation.

MS. NEWMAN: They seem to go up in option one, similar to going up in option two. There doesn't seem to be a big differential.

MR. HAYNES: All the, all the annual costs would go up, it's assumed to go up at two percent per year with escalation. I may have (inaudible). In option two, in option two we assumed in the first, 2004 and 2009, there's $30,000 a year for doing the annual maintenance, so we start out at $32,130, which basically is, you know, $32,000 plus a year's escalation.

MS. NEWMAN: Right.

MR. HAYNES: In 2009 we jump up with the big bump that we had there of $250,000 for vertical reinforcement.

MS. NEWMAN: Uh hum.

MR. HAYNES: And then we come back down to $90,000 a year for the next four years and then jump again to $120,000.

MS. NEWMAN: And the same thing seems to happen in option one, you're saying that's just due to the two percent escalation?

MR. HAYNES: No, I think in option one, just forgetting 2006 for the minute, and I don't have the details of what they've included there ... we've gone $73,000, $77,000, $85,000, $89,000, $93,000, and $98,000, it's going up gradually, it's kind of ... I don't see any step change. It looks like, you know, inflation.

MS. NEWMAN: And this present value analysis doesn't include the internal engineering cost. We had a discussion about that earlier, the overhead costs and ... would it be possible, I know we had some discussion earlier about net, calculating net present value and it can be difficult, would it be possible for you to factor that in and give us a calculation of what the differential would be, or would that be a difficult task?

MR. HAYNES: Well, it can be done, but from my perspective, even if the net present value came out to be less to do another option, it's still not the right thing to do because we're discounting, we have not, we have not factored into any of these analyses, the impact of a failure, either in the fact that we will be out of service for six months on one machine, the fact that we will have other damage, consequential damage, that we may have an impact on the whole plant is depending on where the (inaudible) breaks. If the stack comes down and the fire goes, the fire ball will trip, eventually will trip, you may cause damage to the boiler. The risk of not doing, of not replacing the stack liner, would outweigh, I think, the present value analysis. Now we could go in and put in, you know, assuming year two, five, or ten that we had a failure, and that's really, I don't think that buys us anything. These things assume that we will not have a failure. I think we will be underrating, underscoring the ... underevaluating the risk by not replacing the stack liner. It's the safest and surest way to ensure the availability of that particular machine.

MS. NEWMAN: So if I understand you then, the net present value analysis is almost secondary in the decision making process here.

MR. HAYNES: In my view, I think in the report there, in the summary, we mentioned that any shortfall in power and energy, you know, we put words there to talk about the catastrophic failure, but we have not quantified it with dollars. We have not particularly highlighted safety and environment ... well environment is not such a big concern here, but the safety aspects, we haven't really put any dollar value on those items.

MS. NEWMAN: B-91, the EMS system. Can you tell me when this system was put in place?

MR. DOWNTON: I can speak to that if you want.

MS. NEWMAN: Yeah, okay.

MR. DOWNTON: It was put in service August the 20th, 1990.

MS. NEWMAN: And the life expectancy is?

(2:45 p.m.)

MR. DOWNTON: The life expectancy was 15 years.

MS. NEWMAN: So that would put us to 2005. Is there, would there be any inherent quantifiable risk to putting it off to 2006, by one year, or 2007 by two years? I noticed in the KEMA report, they said that that would be an untenable long-term solution, but in the short-term, for the sake of a year or two, would it be possible to do that?

MR. DOWNTON: I think in, just one second please ... in the project justification on page B-94 and B-95, there are ... it discusses, I guess, what the repercussions would be if the system were to fail prior to it being replaced, and basically what the costs that would be associated with that, so I guess what I would ... this was prepared by our systems operation group who basically have ultimate responsibility for the control centre, and this is their analysis on what those implications are.

MS. NEWMAN: But there's no magic to 2005, it's just the expected life for the ...

MR. DOWNTON: Well, magic in the sense, well we know that our, we are seeing an increase in number of failures on power supplies and universal controllers. We know there are no spare parts there, so, yes, what you're saying, it is a judgement call, and also with the fact that this is really a three year project from the time that it gets go. If you fail, if the system fails and you

have not been in the planning cycle at all, you're looking at upwards of three years to replace the system as opposed to something that you could maybe turn over in a couple of months, which is not the case for an energy management system.

MS. NEWMAN: I wonder if you will explain the nature of the KEMA report? Is that a final report which recommends the system that should be purchased, or is that more in the nature of a preliminary report identifying needs?

MR. DOWNTON: The intent of the report is probably twofold. One was to do an assessment on the current EMS and basically from an infrastructure perspective, whether it was meeting Hydro's requirements, and at the same time to do an analysis on a go forward basis. If we were to replace the system, then what functionality we would look at providing such a system, so basically it covered off both aspects.

MS. NEWMAN: Okay, and what work needs to be done now before you can, before you can actually decide upon what it is that you're purchasing?

MR. DOWNTON: There's enough information in the KEMA report that we can basically, upon approval, begin writing a functional specification which would define in, we'll say, considerably more detail what the requirements are for the replacement energy management system, and what would happen then, then that would go to gender. When we basically have a preferred vendor, we follow the same pattern we did last time, we would sit down with that vendor and then create a work statement which will take that level of detail down further so that it's very specific in what is being purchased and supplied, and then, of course, once that is done, then you actually get into the factory build of that particular system.

MS. NEWMAN: So when you're designing the detailed specifications, would that be done by inhouse engineers or would that be, would you engage KEMA or another consultant to assist you with that?

MR. DOWNTON: Basically that would be done with a combination of inhouse engineers and also consultants.

MS. NEWMAN: And are there things that may change over the course of the next little while that may change your needs in terms of what you're going to be looking for in the specification? I'm thinking of the Electricity Policy Review or something like that that might change the nature of what you're looking for.

MR. HAYNES: I don't think there would be anything specific that would change that. The Energy Control Centre right now does not do distribution per se, it's basically primarily generation, economic dispatch, system generation. A control centre will be required, there is no doubt about that. Even in all these RTOs and the ISOs and all the things that are on the go in the US, control centres are here to stay, they won't go away. There may be slightly different implementations, but I don't think there will be any ... I don't think there will be any significant change regardless of what the Energy Policy Review does that would impact that, unless it was an absolutely wild change in the way we are right now, but I guess it is an uncertainty, but the control centre will be required.

MS. NEWMAN: I just have one more project that I want to refer to, and that's B-120, and this is the study to replace the operational data and voice network, and the only question I have here is have you thought about, and would it be possible, to enter into discussions with Newfoundland Power on coordinating your efforts here, even before you design what you're looking for, even before you conduct this study so that you can find similarities and commonalities before you enter down a road yourselves, have you thought about that?

MR. DOWNTON: Not in those terms.

MS. NEWMAN: Okay, how about in ... tell us what terms you might have thought about it.

MR. DOWNTON: I guess what I, when I responded to the question with regards to this item, the bulk of this infrastructure exists at sites which Newfoundland Power don't exist at, so basically 80 to 90 percent of the infrastructure is at the Hydro-owned sites. Depending on what comes out of the study, if it basically indicates that we should be moving towards and IT based network, then it would be my recommendation that no other party be on that system because of security reasons, and I think what we need to do is first of all to come to a point that we'd have a level of comfort with the technology that we're going down, and then if there is opportunity at that point in time, that it can be, we'll say refreshed if basically Newfoundland Power feels that there is an opportunity there.

MS. NEWMAN: Okay, those are all my questions, Mr. Chair.

MR. SAUNDERS, CHAIRMAN: Thank you, Ms. Newman. Do you have anything in redirect?

MS. GREENE, Q.C.: Only in terms of responding to questions that are outstanding in terms of undertakings that were given either yesterday or early today, so I do have five or six of those.

MR. SAUNDERS, CHAIRMAN: Uh hum, now there may be some questions from the panel members, do you want us to go ahead and ...

MS. GREENE, Q.C.: Sure, if that's ...

MR. SAUNDERS, CHAIRMAN: Mr. Powell, do you have any questions?

COMMISSIONER POWELL: Yeah, I have a couple of minor things. I'll just digest all this. In B-5 you talk about, I think Mr. Haynes, about, he said (inaudible) spare parts.

MR. HAYNES: Yes.

COMMISSIONER POWELL: As a percentage of this project, what are we talking of there, 5 percent, 10 percent, 20 percent, what?

MR. HAYNES: I think in the order of about $30,000, approximately $30,000 are spare parts.

COMMISSIONER POWELL: About 15 percent of the project, and that includes the ... is that $30,000 of material or $30,000 total project?

MR. HAYNES: Well, the spare parts will be just material, there would be very little labour.

COMMISSIONER POWELL: Would you put that in capital, wouldn't that more or less be an inventory item on the operations side?

MR. HAYNES: Usually when we buy, usually on a capital project, when we do that we will buy the spare parts with it, and it will go into inventory and we've had lots of internal discussion on the definition of spares, whether capital spares or otherwise, and I, at this point in time, do not know where that would sit. It would go in the inventory, it would be on the books, the spares will be.

COMMISSIONER POWELL: So it's just a question from a costing point of view, depreciation, whether it was put into your ...

MR. HAYNES: Whether it would attract depreciation or not, I am not ... for those particular spare parts, I would suggest it does not. I don't think that would necessarily be a capital spare. We are going through a large discussion inhouse now trying to come to terms with those issues with respect to our inventory and I'm not sure where that one would fall because it's not a single spare part, it's, you know, a valve and a controller and PLCs, it's a group of smaller things. I doubt it will be capital.

COMMISSIONER POWELL: Another note here, B-7. Yeah, just a note I made when I was reading this prior to, prior to the hearing and listening to some of the comments, one of the notes I have, replacing, it's relatively young, it's only 10 or 12 years old.

MR. HAYNES: Yes.

COMMISSIONER POWELL: Is there any alterative in terms of ...

MR. HAYNES: Right now there are two systems. One is a data acquisition system and one is a vibration monitoring system. The data acquisition system is out of service, it failed, and parts aren't available and I, there was a short life there but we can't get it fixed. The vibration equipment, the vibration monitoring system is, the technology has changed or the vendor has stopped supporting it, and we're getting to the end of its useful life and opposed to going back and just replacing the vibration, basically the proposal is to kind of bring it all together into one system which the vibration company now sells or provides. He will look after the vibration monitoring as well as other inputs which we do not have right now. So basically, while we are, while we're replacing the data acquisition system, the primary driver from coming forth at this time is the vibration equipment, which we had to have. There are some ... the data acquisition system, it's an absolute must to have but it's highly desirable to be able to look at plant parameters and try to be a bit proactive on failures because of temperatures rises and certain equipment that we may not have the information on.

COMMISSIONER POWELL: Is this one of these costs that every so many years you're going to have anyway whether you (inaudible) someone being proactive, so would it be an arrangement that would automatically get replaced by some sort of contractual ...

MR. HAYNES: The vibration equipment tends to last longer. Typically on some of the machines, some of the vibration transducers are embedded in the equipment and they're not easy to change, and they usually last more than ten years. Some of the computer sort of things in the data acquisition, maybe not, and I'm not quite sure what the proposed vendor is proposing for his data acquisition system, but if it's being sold with the vibration equipment, I would anticipate it's probably reasonably good. It should be 15 years at least.

COMMISSIONER POWELL: So you're still not a hundred percent sure now, you're still in the process of going out and getting ...

MR. HAYNES: Yeah, well we will go out and we will identify what we want. We'll go and get ... you know, and we'll go for bids on this. There are two or three vendors for vibration equipment. There are not a lot, there's IRD and Bentley Nevada and a couple of others, but we usually stay with the tried and true ones if all possible because they've been reliable and provide a good service, generally speaking.

(3:00 p.m.)

COMMISSIONER POWELL: B-9, the note that struck me with this one, that ... you talk about design and construction of the stop log, but there's no material supply, it's all labour and engineering, but they're talking about steel.

MR. HAYNES: I think what the, what you will find there is that in the labour side, that would be a supply and install contract. That will be a contract to actually go and fabricate those (inaudible) done that way.

COMMISSIONER POWELL: Okay, so more of a contract as opposed to labour, so ... okay, B-20, the backhoe, the thing that struck me about that particular one is that you have a loader backhoe and you're, for dyking and damn work, but also snow clearing.

MR. HAYNES: Around our facilities, yes.

COMMISSIONER POWELL: The experience I have dealing with people who were in that business is that they always told me to avoid using your construction equipment for snowclearing, it's not a very good use of your equipment, so I just wonder, do you have any experience that way, or is there any alternative to get your snowclearing done another way.

MR. HAYNES: At Bay d'Espoir, there is no other piece of equipment, the loader/backhoe is not there. There is another loader only which I think would be used primarily for the bigger snowclearing. The small, the backhoe would probably used around substations and getting into smaller areas where the other machine can't go, this is the smaller of the two and it does sort of, you know, two functions.

COMMISSIONER POWELL: Have you looked at the cost benefit of getting a third party to do snowclearing, (inaudible) your own?

MR. HAYNES: Not recently, but the snowclearing that they do is, the snow clearing is mostly in Bay d'Espoir on our road, there's a fair bit road work there which is what a larger plough does ... into Upper Salmon, for instance from Bay d'Espoir, so we have the equipment for dyke and damn work as well as other things. I would suggest that because we have it, it's probably easier to, and cheaper just to continue doing as we've done, but it has not been looked at in recent years to my knowledge.

COMMISSIONER POWELL: B-21, the note I had made on that, again, going through this, looking at the fairly significant expenditure and my understanding, Holyrood has a fairly defined life. Some of these expenditures of, we've seen to have a life that could be longer than the life of the station itself, are any of these salvageable if, if it got into ...

MR. HAYNES: If in 2020, I guess, we were to decommission the plant, which I would suggest is probably unlikely, we'll probably go back and look at the, you know, make, undertaking a major overhaul of the plant to bring it back up and to give it another 20 or 30 years, these governors, there are approximately 3,000 in service, I'm sure that some market could be found. I'm not sure how good it is or viable at the particular time, but there are usages for some of this equipment, yes.

COMMISSIONER POWELL: Is that part of your planning process when you're doing significant maintenance at Holyrood, I realize at this stage of the game you're still, it's sort of theory or conception what you may do, but planning for the inevitability that you can incorporate that into a major upgrade (inaudible)?

MR. HAYNES: Not this particular one, because basically we don't have black start capability, and we've already had a failure, since this, since the electronic (inaudible) governor control system was replaced on Unit No. 2, we've had one significant failure on this particular governor, and we used the parts that we got from that to repair this one, and I guess the 34 years of age is the driving point, it's not going to, we don't feel that it's going to last. The other thing is the actual function of the electrohydraulic control. It's, some mechanical engineer once told me that the governor is the heart of the system, and this particular thing on the hydraulic generator controls a lot of things with respect to all the steam valves that to go the turbine, and any failure is a problem. It can cause trips or it can cause damage or ... we have to maintain control, so it's a critical piece of equipment at Holyrood.

COMMISSIONER POWELL: B-19, that's the putting a piece on the building in Deer Lake. You doubled the staff there from 40 *(phonetic)* employees, is that recent?

MR. HAYNES: They've been added over the last number of years.

COMMISSIONER POWELL: Why would there be a significant increase in the period (inaudible)?

MR. HAYNES: Well basically the maintenance area that's serviced ... when Deer Lake office was originally built back in 1981 the main service area was, say, from Howley, Cat Arm, down through to, say, Doyles, in that area, and then since then we've added the Northern Peninsula when we built the transmission up there in the mid-nineties, and also we also service southern Labrador from that site as well.

COMMISSIONER POWELL: Don't you have a major installation in Port Saunders for ...

MR. HAYNES: Not for the ... not for network services, network services for all of the west coast and southern Labrador is serviced out of Deer Lake.

COMMISSIONER POWELL: So when you say network, you're talking about communications.

MR. HAYNES: Yes.

COMMISSIONER POWELL: Okay, are there any options for sharing space with Deer Lake Power in terms of ... you're talking about meeting rooms and things over to Newfoundland Power, do they have anything in the area?

MR. HAYNES: To be honest, I don't know if they do. It has not been pursued.

COMMISSIONER POWELL: It hasn't been something you looked at. Okay, the other comment I have is just, it's more general. The criteria you started out ... you talked about safety and reliability, and I guess we all appreciate that, whether we're in business or home watching the last few minutes of the hockey game or something, and reliability, it's very important, but the, two of the criterias that, if you're in the private sector in a business you look at is that, it could be customer satisfaction in terms of product, pricing, and from a corporate perspective it's increase or maintaining the bottom line. Other than every now and then, there's been a couple of examples here, but the total budget itself, I never, I don't get the feeling how this expenditure of $30 odd million, or your portion thereof is going to satisfy those two requirements, so is that part ... in doing this from a budgetary point of view, do these things come into play?

MR. HAYNES: They do, when we generate a budget, I guess there's a general guideline to the supervisors, the engineering departments, regional managers, plant managers, as to what our priorities are, and obviously they are the safety, reliability, environment, and any cost-saving measures we have. The $30 million or the $33, roughly $33 million, we did look at the overall requirements, and we do shift things around trying to keep the cash flow, or you know, the budgeting requirements down to some, what we think is a reasonable level ... all the things that are in the budget are reliability, they are to ensure, they may not improve, some of the things we have right now, if we don't have any defined failures, but they surely will prevent a deterioration in the level of service, you know, the number of events that we have that cause customer outages, so it's there to, to at least maintain the status quo and in some cases improve from that point of view. It's hard to quantify, I mean on the customer

satisfaction, we are concerned about that obviously, and we are, we're striving to improve that. We do have some aging plant which is causing us some grief, and some of these proposals are to hopefully address those issues, but it won't cure it.

COMMISSIONER POWELL: Now one of the information requests shows that the operating costs of the Hydro will increase by approximately $2 million by increasing depreciation over and above from one year to the next. Is there any feeling of challenge from reduction that we should find the comparable savings in the system so that, without compromising safety and reliability so that there would be no increases in costs?

MR. HAYNES: That's an ongoing exercise that we are, we are doing that consistently and probably in the more, in the last year we're doing more than before. We are going back and looking at all kinds of processes trying to reduce costs. We are quite conscious of where the, where the costing is going and what will happen to the rates eventually, and we are definitely looking, trying to capitalize on savings wherever and however we can. That's an ongoing exercise.

COMMISSIONER POWELL: In your view then, the amount of monies that's under your control in this capital budget, if it was approved that the costs and the savings would balance themselves out, or ...

MR. HAYNES: Over time, over time, but recognizing that some of the things that are there, if we go through them, we're exposing ourselves to a higher risk of failure, such as the stack liner in Holyrood, for instance, that if it does fail it's a pretty big event and will take that machine out of service for some period of time.

COMMISSIONER POWELL: That's all the questions I have. Thank you.

MR. SAUNDERS, CHAIRMAN: Thank you, Mr. Powell.

MR. MARTIN, Q.C.: I just have two or three. On that building in Deer Lake, B-119, I did a quick square footage thing a few days ago, and it works out to $164.64 a square foot for 625 square feet. I was wondering why the cost was that high.

MR. DOWNTON: I, like I say, all I can say is that that's the estimate that I got from our civil group, and I didn't explore any further.

MR. HAYNES: It does include the air handling machine for the (inaudible), I understand, the air handling unit, so ...

MR. MARTIN, Q.C.: Alright, so it's the construction plus the air exchanger, whatever it was that was referred to yesterday. On A-2, it seems under generation, hydro plant, thermal plant, and TRO has it as well, and we can ask those people but for hydro plants there's tools and equipment, $117,000, thermal plant tools and equipment, $73,000. At the time when I was reading it, it struck me that it would seem to me over time you would build up, I don't know, a bank or a store of tools and equipment, and that you wouldn't have, there would be no need for an annual expenditure for tools and equipment. I didn't see a breakdown anywhere in the materials that I got as to what specifically is meant by tools and equipment.

MR. HAYNES: All the tools and equipment, basically anything that's under $50,000, we don't provide, you know, the same level of details, so the $73,000, for instance, that the, I'll go back to the ...

MR. MARTIN, Q.C.: The thermal plant.

MR. HAYNES: I'll go back to the hydro plant, the $114,000, there are various things there, some that is related to, in this particular case, related to Granite Canal because we have a new plant coming online, and rather than lugging or trucking, you know, welding equipment or whatever from Bay d'Espoir up there over the road and beating it up, we basically put it there and we leave it there for that plant, and cumulatively they add up to $144,000 ... an oxyacetylene torch, chain hoist, fibreglass step ladders, there's various things. It also includes the, any requirement for replacing ski-doos or ATVs that we use on a routine basis, and they are replaced on an three or a five year shift. I don't know exactly recall, but ski-doos basically are used fairly intensely in Bay d'Espoir for up-country work, they are also part of that particular budget. At Holyrood, there are, generally there are some, there's a requirement for some confined space equipment, you know, the replacement of (inaudible) suits and so on, which would be used down there for fire fighting and other chemical events. It's a fairly complex environment from the point of view of the chemicals and so on, so there is some emergency response material. It covers various things, and also just the usual replacement of broken or damaged tools over time.

MR. MARTIN, Q.C.: So those figures, would that be an average figure for tools and equipment for your capital budget every year?

MR. HAYNES: I would suggest that the hydro plant one, without actually going back and looking at previous years, it's probably a little bit higher because we are basically staging up Granite Canal. The Granite Canal project has been built and turned over and other than, you know, some specialized tool that is provided by General Electric, the turbine or something like that, basically we're going into basically an empty building or equipment only, there's no tool lockers, so I would suggest that the hydro, the hydro side is probably a little higher than normal, and the one at Holyrood may be on par or a little bit above, because we are replenishing the emergency response material.

MR. MARTIN, Q.C.: Yeah, I noticed for future years, hydro plants has $121,000 and Holyrood doesn't have anything for future years.

MR. HAYNES: Yes, that $121,000 is related to the loader backhoe that we were discussing.

MR. MARTIN, Q.C.: Okay.

MR. HAYNES: $3,000 in year one to do the specification.

MR. MARTIN, Q.C.: Right.

MR. HAYNES: The actual backhoe will be purchased in 2004.

MR. MARTIN, Q.C.: Yeah, that's right

MR. HAYNES: But I wouldn't, you know, I wouldn't want to mislead you. I know that in 2004 we will still have money there for, you know, replacement of tools and equipment, for welders, a chain hoist, or whatever it is that's worn out over time.

MR. MARTIN, Q.C.: I think the other question I had had to do with, I think it was B-96, and the operator training simulator. It was my understanding that there was already a training simulator at Hydro Place.

MR. HAYNES: There is, but it's not used.

MR. MARTIN, Q.C.: Pardon me?

MR. HAYNES: There is, but I understand it's not used very much right now.

MR. MARTIN, Q.C.: Would that be able to be used with this new, this new EMS system?

MR. HAYNES: I was ...

MR. MARTIN, Q.C.: If it was modified for that purpose?

MR. HAYNES: It's a part of the EMS that we have right now, but Eric could probably answer that question in a bit more detail than I could.

MR. DOWNTON: Yeah, what's called the dispatcher training simulator that you referred to is built into the existing energy management system.

MR. MARTIN, Q.C.: And it wouldn't be able to be modified or used for this new ...

MR. DOWNTON: Basically the software and the hardware are totally proprietary and it's the same issue with the other parts of the energy management system.

MR. MARTIN, Q.C.: Okay, that's it for me.

MR. SAUNDERS, CHAIRMAN: Thank you, Commissioner Martin. I was hoping that we would have finished a little earlier, but it's now 20 after 3:00 and I have a few questions myself, and we're going to hear from Ms. Greene again, I think we'll break now for 15 minutes and come back at 25 to 4:00. Thank you.

(break)

(3:35 p.m.)

MR. SAUNDERS, CHAIRMAN: I understand that we may go a little later than 4:30 in order to try and finish up this aspect of the hearing, is that agreeable with everyone?

MR. HUTCHINGS, Q.C.: I think we can accommodate that, Mr. Chair.

MR. SAUNDERS, CHAIRMAN: Okay, we'll see how we do at 4:30. Mr. Martin, I think, has one more question.

MR. MARTIN, Q.C.: Yeah, I have one question which was related to the simulator again, and I meant to ask you before but do you have any idea of the cost of the simulator itself?

MR. DOWNTON: $75,000.

MR. MARTIN, Q.C.: Was any thought given to doing the training program hand-in-hand with the university or the college, anything like that?

MR. DOWNTON: Not that I'm aware of. The way the training simulator works is that it's specifically designed to simulate the hydro model as far as the transmission and generation facilities, and also, like the protective relaying and everything is built into an operating training simulator model, so I would suspect that ... it hasn't been pursued but I would doubt that it would be a feasible option.

MR. MARTIN, Q.C.: Okay, thank you.

COMMISSIONER POWELL: Does every control centre across the country have a simulator attached to it or ...

MR. DOWNTON: I would suspect most of them would. Typically the control centres that you will see are more in the generation and transmission area, and some distribution, but primarily it will be generation and transmission utilities.

MR. SAUNDERS, CHAIRMAN: Okay? Mr. Haynes and Mr. Downton, I refer you, first of all, to Tab H, which is the telecom plan, and page 23 specifically, and in the, at the commencement of the second last paragraph there's a reference there to the Department of Works, Services, and Transportation, and I recall some discussion on this point during the hearing last year and I don't recall the details and I haven't looked up the transcript but there was reference to the Department of Works, Services, and Transportation's intention to participate in the funding, I think that word is, funding and usage of the Hydro mobile radio system. What's happened to discussions on that point up to now, is there any new development?

MR. DOWNTON: Well, we've just put it in abeyance, we really haven't ... we're continue to refine the dollars but we really have not actively pursued that in the last number of months which would probably date back to this spring.

MR. SAUNDERS, CHAIRMAN: And am I correct in my assumption that if there is anything that develops in that respect, it would be shown in your operating budget as opposed to your capital budget?

MR. DOWNTON: Yes.

MR. SAUNDERS, CHAIRMAN: As a revenue item?

MR. DOWNTON: As a revenue item.

MR. SAUNDERS, CHAIRMAN: Yeah, excuse me, okay, in B-28, you have talked about ... well you've shown $150,000 for engineering and I think when you read through the detail of that, it's to do a study. I'm wondering if, first of all, if that's an internal or an external study that's being contemplated there.

MR. HAYNES: That will be a combination of both. It will be managed by our generation engineering section but they will hire the expertise in some of the areas where we don't have enough internal expertise. We are looking at trying to come up with some realistic dollar values for pollution control equipment, what we can do to remove the large particulate matter which is an irritant to the nearby residents of Holyrood, and so it will be a combination of both, but we will have to hire external, you know, some specialist in the steam plant, and particularly emissions technology to ...

MR. SAUNDERS, CHAIRMAN: I bring it up as an example really. I guess I'm wondering, this equipment that you're talking about putting in here, the flue gas particulate removal equipment, it's not something that's unique with Hydro, I would assume that you will find similar equipment in other thermal generating plants.

MR. HAYNES: Yes, you would.

MR. SAUNDERS, CHAIRMAN: And do you seek, let's say the experience of other operators across the country or into the US in terms of what's required in events such as this, in terms of the emission equipment, or emission control equipment?

MR. HAYNES: The plant manager at Holyrood does participate in kind of a user group.

MR. SAUNDERS, CHAIRMAN: Yes.

MR. HAYNES: For thermal plant operators where they field questions back and forth and what is your

experience on, it could be on a piece of equipment or on something ... or whatever, so they do participate from that point of view. In Holyrood's case, what was intended, or what is thought, the initial thing that we may do is put in screens to reject or collect or deflect the large particles, and it comes down to where they could be located in Holyrood, can it be put in the duct work that we have. You have to look at the specific design of the plant. We've taken that and we've expanded it a bit to look at other technologies, you know, at least to have (inaudible) to these other things as well, but there is consultation with the other group, and there's a fair bit of dialogue. We meet with the regulator on a fairly regular basis, being the Department of Environment, and they have their preferred list of things for us to do, and we dialogue about that, and we, you know, we don't do everything they wish, I assure you. We try to satisfy at least their minimum requirements.

MR. SAUNDERS, CHAIRMAN: Well, let me ask another question, would the benefit of that kind of consultation with other users reflect in the cost of this engineering study that you're proposing here?

MR. HAYNES: I would suggest, yes, this particular project was put forth by the plant manager at Holyrood.

MR. SAUNDERS, CHAIRMAN: Yeah.

MR. HAYNES: So he would have, he would have, I'm sure, gotten information from other groups as required, or from out partners out there. We do have (inaudible) as a partner who are basically quite involved in the (inaudible) technology and also pollution reduction equipment, but obviously it's only their particular brand, if you will, so there's a fair bit of dialogue went in there on that up front.

MR. SAUNDERS, CHAIRMAN: So there is an association or an organization that your operators and your other executives and managers and supervisors can take advantage of in putting together these various projects?

MR. HAYNES: There is a thermal plant user group called, I think it's FORMUS *(phonetic)*, and they subscribe, they pay a couple of thousand bucks a year, whatever, to be part of that group, but they do field questions back and forth.

MR. SAUNDERS, CHAIRMAN: Uh hum.

MR. HAYNES: And it's been a value to us many times looking at different options or different things that we do. I couldn't say specifically if there was a lot of dialogue on this particular project, but I have no reason to suspect there was not some fielding of ideas before we actually came forward with it.

MR. SAUNDERS, CHAIRMAN: Do your people from time to time visit other plants in other parts of the country?

MR. HAYNES: Not as much, not often, occasionally.

MR. SAUNDERS, CHAIRMAN: Not often. Do you think it's an advantage?

MR. HAYNES: Personally I do, it has happened when somebody was up there for other reasons or whatever, but it's not, we have not said for the plant manager or the maintenance, assets manager, whatever, to go Nova Scotia Power for a week and have as look around. It's been done on an infrequent basis and not in recent times to my knowledge, certainly not this year that I know of.

MR. SAUNDERS, CHAIRMAN: How about from the other direction, do you often times get personnel from other generating plants in other parts of the country coming in to see your operation here?

MR. HAYNES: In Holyrood I'm not aware, on the hydro side, and I'll speak from Churchill Falls experience, we did in Churchill Falls have people come through on occasion, internationally actually, looking at different aspects, usually brought in by consultants who were looking for the business as opposed to coming on their own.

MR. SAUNDERS, CHAIRMAN: And the reason I ask, I guess, is because it appeared to me when I read this one particularly that this is not, you know, reinventing the wheel here. It seems to me that this would be something that would have been considered by other operators in other parts of the country when they're installing their plants, and certainly there should be some experience to draw on, I guess, and hopefully if that experience is available, it would have the effect, I would hope of reducing your costs in the initial stages, you know, the engineering work and so on.

MR. HAYNES: Well, we would count on that too as well from the external expertise, as we indicated on page

B-29, that they would bring that to the table as well, but the intention of the study was to ... we know that we can go and spend 50, 60, to $100 million to clean it up really nicely, and we're not suggesting that we do it at this point in time, but what we're looking at doing is trying to make some noticeable impact, some improvement at a least cost.

MR. SAUNDERS, CHAIRMAN: Uh hum.

MR. HAYNES: Eventually we may be pushed into a higher cost by the regulator, we don't know that at this point in time, but we're trying to stay ahead of it, and without actually committing a large number of dollars for this project.

MR. SAUNDERS, CHAIRMAN: Yeah, I gotcha. Still staying with Holyrood, and I'm talking now particularly, I guess, about B-32, at least generally it's about B-32, and that's the stack replacement or the stack liner replacement.

MR. HAYNES: That's right.

MR. SAUNDERS, CHAIRMAN: Most of that work, I think, from what I've heard you say so far, Mr. Haynes, is to be done by external contractors.

(3:45 p.m.)

MR. HAYNES: Yes, yes.

MR. SAUNDERS, CHAIRMAN: The actual ...

MR. HAYNES: Installation.

MR. SAUNDERS, CHAIRMAN: ... installation of the liner. Is it normal for Hydro to seek guarantees on material and workmanship in such cases?

MR. HAYNES: Yes, but it's usually a fairly limited timeframe, I can't be specific about the number of years here but when we're going for some equipment we look, for instance, on the IS and T side, we look for confirmation that the vendor will support them for a five to ten year timeframe, ten years I believe is what we look for, and we get some commitment there. On these type of material contracts, there's usually a fair bit of follow-up with, a fair bit of assurances and, from the supplier. On other contracts we have at Holyrood, we do go back and we do have events, for instance, we have partnering agreements that we have right now. Occasionally there is an issue that comes to bear and we'll go back and we'll negotiate then and we usually get it done for, under a warranty if you will, or at least at a much reduced cost based on the shared responsibility sometimes.

MR. SAUNDERS, CHAIRMAN: And these guarantees, I guess, would be a factor in determining who you're going to award the contract to.

MR. HAYNES: Well, that would all be taken into consideration to evaluate the cost and ...

MR. SAUNDERS, CHAIRMAN: Right, there are two other stacks out there?

MR. HAYNES: Yes, there are.

MR. SAUNDERS, CHAIRMAN: There hasn't been any mention made of it that I can recall, unless I had a lapse during the last day and a half, but what's the condition of two and three, and I think that's on the record but ...

MR. HAYNES: Stack number three is newer. Stack number three was built in 1979/80 ...

MR. SAUNDERS, CHAIRMAN: Yes.

MR. HAYNES: So it would be ...

MR. SAUNDERS, CHAIRMAN: 20 odd years old.

MR. HAYNES: ... in (inaudible), but I would anticipate in the next, that in the next five years you will see the other stack come up. What we're trying to do, or what we have to do is we try to coordinate that particular repair with the major outage.

MR. SAUNDERS, CHAIRMAN: Yes.

MR. HAYNES: Every three years we do a minor overhaul on the unit and every six years we do a major overhaul and the major overhaul, the machine is out for that particular unit, it's out of service for, I believe it's 12 or 14 weeks, or 16 weeks. It's out for about three months, and so we would target to do that major repair at that particular time to maximize the availability.

MR. SAUNDERS, CHAIRMAN: Okay, that concludes what I had. Ms. Greene?

MS. GREENE, Q.C.: Thank you, Mr. Chair. I have five or six, possibly, questions that were left outstanding from yesterday. The first relates to an undertaking provided on page 31 at lines 13 to 16 with respect to the confirmation of the overhead rate. Mr. Haynes, have you had time to confirm the overhead rate charged by Hydro to these capital projects?

MR. HAYNES: Yes, the overhead rate, I had mentioned that it was four to five percent, and it's in fact six percent, and that's used for all the budgeting exercises.

MS. GREENE, Q.C.: The next question relates to the spherical valves at Bay d'Espoir, and again, this is also found on page 31. There's a reference with respect to these, this capital project of a number of maintenance events at 36, have you had time to determine the number of events related to the particular project being proposed for 2003?

MR. HAYNES: Yes, I had indicated that 36 events were associated with all the valves. In fact, the 36 events are the number of events on valve number one for the last five years. For all the valves, the six spherical valves, in the last five years we've had approximately 160 corrective maintenance work orders.

MS. GREENE, Q.C.: And so the 36 again, this related to the particular one we're proposing to be replaced in 2003.

MR. HAYNES: That's correct.

MS. GREENE, Q.C.: The next question relates again to the spherical valves at Bay d'Espoir and it relates to questions by Ms. Andrews found on page 32, lines 9 to 12, and it relates to the two units that have already been replaced. In that answer you indicated that, in fact, in the explanation, it's number five and number two, what two units have the valves already been, the controls already been replaced for the spherical valves?

MR. HAYNES: Well, there's two corrections on my part there. First of all, the documentation says that number five was, sorry, the spherical valves were replaced, the controls were replaced, it's actually number four. That was done in 2001, and in 2002, unit number two was done. Both those particular projects were done in concurrence with other major maintenance items. Basically the surge tank was out of service, so there was an extended outage, so we did it at the same time, and this year the surge tank was out of service as well, as we basically had to take number two, to remove the rotor, the runner to do other repairs, so we did it at the same time as there was another major outage planned.

MS. GREENE, Q.C.: So in fact, Mr. Haynes, you've just indicated a correction to page B-5, the unit number being replaced being number four and not number five as indicated under operating expense, is that correct?

MR. HAYNES: Yes, that's correct.

MS. GREENE, Q.C.: And you indicated the correct times for the replacement of the previous two, is that ...

MR. HAYNES: Yes.

MS. GREENE, Q.C.: The last undertaking arising from yesterday from Ms. Andrews relates to the fencing at Bay d'Espoir and at Holyrood, and there was an undertaking, an undertaking provided on page B-40 with respect to checking the numbers for both of those. Have you had the opportunity to do that since yesterday?

MR. HAYNES: In both those particular projects, I guess the big difference was the depreciation was indicated yesterday, but the percent of total for the overheads and etcetera is all in the order of approximately 18 percent. The contingency in both cases was ten percent, and the (inaudible) and escalation would depend on when the money is being spent, of course.

MS. GREENE, Q.C.: So with respect to both of those, similar factors were applied to both fences, the difference ... is there a difference between the two?

MR. HAYNES: The only difference ... there's no difference in both, both use the same contingency, they both use the overhead rate. The difference, the only difference that was indicated was the service life or the depreciation period, and that was based, of course, on the depreciation policies approved by the Board.

MS. GREENE, Q.C.: And I just want to correct, sorry, my reference. I said to page 40, but it was to page 41, and the undertaking was at lines 48 to 54. The last one now was an undertaking provided through the evidence of Mr. Downton today, and it relates to the policy with respect to disk storage expansion. Have you had the opportunity to check that, Mr. Downton?

MR. DOWNTON: Yes, I have.

MS. GREENE, Q.C.: And could you please explain what the policy is?

MR. DOWNTON: The policy that we use for the increase in disk storage capacity is we will red flag when the disk storage gets to 50 percent, and then begin the planning sequence so that when it becomes 70 percent full, then we basically are able to upgrade the disk. 70 percent is the industry standard number that is used because beyond 70 percent full storage, the computer will suffer from non-performance beyond 70 percent.

MS. GREENE, Q.C.: Thank you, that concludes the outstanding issues as we have identified them from reviewing the transcript and from keeping notes today. Thank you.

MR. SAUNDERS, CHAIRMAN: Thank you, Ms. Greene. That's all of this panel?

MS. GREENE, Q.C.: Yes, it is, thank you.

MR. SAUNDERS, CHAIRMAN: Thank you, Mr. Haynes, Mr. Downton.

MR. DOWNTON: Thank you.

MS. GREENE, Q.C.: It will only take us a moment for Mr. Haynes and Mr. Downton to vacate their seats for the eagerly awaiting Mr. Reeves and Mr. Holden.

(4:00 p.m.)

MR. SAUNDERS, CHAIRMAN: Okay, Mr. Reeves, do you want to take the Bible in your right hand please? Do you swear that in the evidence you're about to give you will tell the truth, the whole truth, and nothing but the truth, so help you God?

MR. REEVES: I do.

MR. SAUNDERS, CHAIRMAN: Thank you, and Mr. Holden, do you swear that in the evidence you are about to give you will tell the truth, the whole truth, and nothing but the truth, so help you God?

MR. HOLDEN: Yes, I do.

MR. SAUNDERS, CHAIRMAN: Thank you, have a seat gentlemen.

MS. GREENE, Q.C.: Mr. Reeves, could you please state your full name for the record please?

MR. REEVES: David William Reeves.

MS. GREENE, Q.C.: What is your current position with Hydro?

MR. REEVES: I'm the Vice-President of Transmission and Rural Operations.

MS. GREENE, Q.C.: How long have you been in that position?

MR. REEVES: Over seven years.

MS. GREENE, Q.C.: How long have you been with Hydro?

MR. REEVES: It's over 30 years. It's 30 years this June past.

MS. GREENE, Q.C.: What positions in a very brief overview have you held during the last 30 years?

MR. REEVES: I guess my career started basically after my graduating, I spent two years, a graduate training program, I went into hydro generation in Bay d'Espoir where I worked for 11 years. I moved from there to Churchill Falls in 1985, as the Vice-President of Operations and Engineering. I came back to St. John's in 1991 as the Vice-President of Engineering and Corporate Services until seven years ago when I took my current position.

MS. GREENE, Q.C.: What are the responsibilities of your current position?

MR. REEVES: My current responsibilities are basically responsible for the operations and engineering associated with the transmission and rural operations department which includes the transmission grid, the distribution system, the stand-by generation, gas turbines, and also the isolated systems, the 25 isolated systems that we have. That includes the operation, as I said, the operations and engineering. Also I have responsible for the corporate, environmental and property services as well, and they develop the

corporate policies and procedures which we bring forward for adoption.

MS. GREENE, Q.C.: Now what was your involvement in the 2003 capital budgets that are here from transmission and rural operations?

MR. REEVES: My direct involvement is, well prior to my direct involvement, I guess, the people in the field in engineering and some projects in planning as well, they develop the particular projects associated with the TRO assets. They were developed and then I reviewed those with the managers and directors in my section. Following that I would have made presentations to management for approval and answered their questions, and also as management I would have participated, not only in my sections, but the other sections of the corporation to ensure that we had an adequate review done. The projects that we reviewed, as we've heard several times in the last couple of days, were basically ranked on safety, environmental, reliability, and trying to reduce our cost of providing service, reliable service to our customers. Following this I assisted in the information from the, which was prepared for the application and also the RFIs which were responded to.

MS. GREENE, Q.C.: Once our budget is approved for capital for 2003, what will be your role?

MR. REEVES: My role is to ensure that we complete our capital budget as we have asked for it, and in a timely fashion, and also within the dollars that we have asked for.

MS. GREENE, Q.C.: Could you look please now on page A-1 of the application? What are the headings on page one for which you and Mr. Holden are speaking today?

MR. REEVES: Yes, we are responding to the sections on A-1 which is transmission and rural operations, which is a little bit in excess of $10 million, and also I will be responding to the $1.5 million under general properties, which is vehicles, and there is also a couple of other projects there which I will be responding to as well under the general properties.

MS. GREENE, Q.C.: So if we look to page A-3 which is the breakdown of general properties, could you indicate what heading there you're speaking to that you just talked about?

MR. REEVES: Under administrative, I will be responding to those, $1.8 million.

MS. GREENE, Q.C.: Mr. Holden, what is your current position with Hydro?

MR. HOLDEN: I am currently the Director of the Engineering Department in the Transmission and Rural Operations Division.

MS. GREENE, Q.C.: How long have you been in the engineering department within TRO?

MR. HOLDEN: I've been there since I started with Hydro in 1981.

MS. GREENE, Q.C.: What are the responsibilities of your current position?

MR. HOLDEN: The responsibilities of my current position is to direct the efforts and the operations of the engineering design group to the support of the capital budget and to the general operation of the (inaudible).

MS. GREENE, Q.C.: How is your involvement different than Mr. Reeves' with respect to the capital budget process that he just outlined?

MR. HOLDEN: In that the engineering department is responsible to participate with the operations group and the systems planning group in assembling the budget proposals, providing the engineering input and the engineering estimates and writing up the explanations for budget proposals and on some instances, originating budget proposals from within our own department.

MS. GREENE, Q.C.: And once this budget is approved, what will be your personal role?

MR. HOLDEN: Our personal role once the budget is approved would be to undertake to project manage the projects that are assigned to the engineering department and also to assist the operations group in the management and the execution of the projects that are assigned to that group.

MS. GREENE, Q.C.: I'd like you now, Mr. Reeves, to turn to page B-3, which lists the projects over $50,000 in transmission and rural operations. Were the

explanations for each of these projects submitted with the application prepared under your direction?

MR. REEVES: Yes, they were.

MS. GREENE, Q.C.: Are there any corrections that you would like to make to any of those explanations at this time?

MR. REEVES: Yes, there is two.

MS. GREENE, Q.C.: And what is the first one?

MR. REEVES: B-40, and Mr. Holden can go through that particular one.

MS. GREENE, Q.C.: B-40, Mr. Holden, could you indicate the change please?

MR. HOLDEN: On B-40, in the expenditures in the year 2003, you'll notice that there is no entry for the engineering figure, and that's basically a typographical error. The engineering costs there really should be 37.4, and the project management costs should be 3.8, and there are no figures for inspection and commissioning because in this particular case all the inspection and commissioning would be part of the labour estimate of 78.9.

MS. GREENE, Q.C.: So the bottom line total doesn't change though, is that correct?

MR. HOLDEN: The bottom line total remains the same.

MS. GREENE, Q.C.: What is the second explanation you would like to correct, Mr. Reeves?

MR. REEVES: B-124, and Mr. Holden can also do that one as well?

MR. HOLDEN: On B-124, again, there's an edit for a typographical error, the amount of 300,000 lineal meters in the first line of the operating experience should read 300,000 square feet.

MS. GREENE, Q.C.: Subject to those two corrections, do you accept the explanations that have been filed with the application for the projects within transmission and rural operations as your evidence for the purposes of this hearing?

MR. REEVES: Yes.

MS. GREENE, Q.C.: Thank you, that concludes the direct examination of the witnesses for this panel.

MR. SAUNDERS, CHAIRMAN: Thank you, Ms. Greene.

MR. HUTCHINGS, Q.C.: Thank you, Mr. Chairman, Mr. Reeves, a general question first. On the various projects that are here, there are a fair number of them that are qualified or classified in the fourth line at the top, the classification being distribution.

MR. REEVES: Uh hum.

MR. HUTCHINGS, Q.C.: Do I assume correctly that all of those projects would relate to rural operations?

MR. REEVES: That's correct, yeah.

MR. HUTCHINGS, Q.C.: Okay, so that's all things that are consistently assigned to the rural side and wouldn't affect other customers of Hydro, is that correct?

MR. REEVES: That's on page A-7 that you're referring to?

MR. HUTCHINGS, Q.C.: Well, each of the project explanations has a project title, a location, division and classification.

MR. REEVES: Okay, yes, yes.

MR. HUTCHINGS, Q.C.: So classification, distribution, is all rural operations.

MR. REEVES: That's right, yes.

MR. HUTCHINGS, Q.C.: It wouldn't be, have any impact on the Industrial Customers.

MR. REEVES: All of our industrial customers that you're associated with come off our main 230 kV grid, the interconnected grid.

MR. HUTCHINGS, Q.C.: Yeah, okay, B-38 is the upgrade to TL-214, and the study that relates to that is in Section G at Tab 3. That's described there as the radial line serving Newfoundland Power customers from Doyles to Port Aux Basques, but that is part of the grid as far as you're concerned?

MR. REEVES: That's what we call the, the interconnected grid, yes.

MR. HUTCHINGS, Q.C.: Yes, okay, you've provided the SAIDI and SAIFI results in the summary on the study that was done and pointed out that they're not in the acceptable range. Do you have anticipated SAIDI and SAIFI results for this line when it's upgraded?

MR. REEVES: That's a difficult thing to do because while we can look back in history and see what was attributed to a particular event like a wind storm, a salt storm, or the like. Predicting in the future as to exactly what we will be able to achieve from these savings is very difficult to do and I guess we'd be a bit a reluctant to do that because the tendency would be there that you would look at the SAIDI and SAIFI before you did the upgrade and then look at them after the upgrade, but there could be a number of other factors that could cause outages, so you can't do a direct comparison, so it's difficult to do.

MR. HUTCHINGS, Q.C.: Presumably the ...

MR. REEVES: We can only look in history as to what it's cost.

MR. HUTCHINGS, Q.C.: Yeah, presumably the upgrade is engineered with a view to producing satisfactory SAIDI and SAIFI results.

MR. REEVES: Lowering the SAIFI and SAIDI associated with those particular events.

MR. HUTCHINGS, Q.C.: Uh hum, okay, if we can look briefly at B-42, this is upgrading of protection and includes the process of microprocessor based relays and associated equipment and so on, and part of your description here, I think, refers to the fact that this is part of an ongoing initiative to improve protection of the system on the bulk transmission system. Is, how big a plan is this overall, I mean how many of these relays are anticipated to be actually replaced in the big plan?

MR. HOLDEN: We don't have the exact number of relays but we do have various transmission lines that we've priorized over the next few years that we have an intention to upgrade the protection systems on. As to the exact number of relays, I don't have that information.

MR. HUTCHINGS, Q.C.: Okay, how many, do you know how many relays we're dealing with in this project?

MR. HOLDEN: Well, there's one per line.

MR. HUTCHINGS, Q.C.: Okay, and we're dealing with four lines here.

MR. HOLDEN: Yeah.

MR. HUTCHINGS, Q.C.: Okay, and are we basically looking at one on all of the existing 138 kV lines, and a few others at some point?

MR. HOLDEN: Sorry?

MR. HUTCHINGS, Q.C.: In the future at some point are we looking at replacing one of these relays on all of the existing ...

MR. HOLDEN: Yes, yes, what it is is the protection relay for the transmission line.

MR. HUTCHINGS, Q.C.: Right.

MR. HOLDEN: To replace the old electromagnetic relays, and basically what you're talking about is one relay per line.

MR. HUTCHINGS, Q.C.: Uh hum.

MR. HOLDEN: One relay per end of each line, because you look from both directions.

MR. HUTCHINGS, Q.C.: Right, okay, so it's an ongoing initiative, you say, I mean how many years has this been ongoing now?

MR. HOLDEN: I think this is the first year, and we're trying to work our way out from the 230 kV system out onto the 138, and we have lines in our lines priorized for the next four years.

MR. HUTCHINGS, Q.C.: Okay, and so we can expect a roughly similar amount in each of the next four years?

MR. HOLDEN: That's right.

MR. HUTCHINGS, Q.C.: Yeah, okay, if we can look at B-46 for a moment, that's the Long Harbour terminal station, this is to provide station service at this terminal

station, which is apparently now using what's called the customer's facility, what customer are you talking about here?

MR. HOLDEN: The customer here right now is the Long Harbour Alliance.

MR. HUTCHINGS, Q.C.: Okay, so they have taken over the equipment which included the old ERCO system, is that the idea?

MR. HOLDEN: That's correct.

MR. HUTCHINGS, Q.C.: I mean has there been a problem with accessing that customer's facility?

MR. HOLDEN: There is a problem in the sense that the equipment is not maintained to the same degree that it was when industrial operation was in force there, and it becomes a problem for our staff in going into that facility and finding their way around and trying to find out what the trouble is and why the station service supply has been interrupted, so what we need here is a supply integral to our own station.

MR. HUTCHINGS, Q.C.: And who else does that station serve aside from this customer?

MR. HOLDEN: The only purpose for this station now is to serve that general service customer and also to operate our capacitor bank which is located in that station.

MR. HUTCHINGS, Q.C.: Okay, has there been any discussion of downloading that customer, if you will, to Newfoundland Power or ...

MR. HOLDEN: Yes, we have looked into that to see if that was possible, the costs to service that customer from Newfoundland Power are not justified from the point of view of how much it would cost to extend the Newfoundland Power system down to pick up that customer.

MR. HUTCHINGS, Q.C.: Have you discussed the possibility of specifically assigning that facility to that customer?

MR. HOLDEN: Can you answer that question?

MR. REEVES: Well, that is a difficult question to answer and it's not directly in my field, but my understanding that has been looked at and as Mr. Holden has said, the main purpose of that terminal station there right now is for our voltage control on the east coast, and we need that capacitor bank that's in service there, so we need that.

MS. GREENE, Q.C.: At the risk of not giving evidence, the capacitor bank is a common asset required for the common grid, I don't know if that's helpful.

MR. HUTCHINGS, Q.C.: I think we had that debate in the previous hearing.

MS. GREENE, Q.C.: And that was the outcome.

MR. HUTCHINGS, Q.C.: It may need to get revisited in light of further investment. I take it this investment is not going to do anything for the capacitor bank, is it?

MR. REEVES: It provides a service to the station service which, so this capacitor bank requires to remain in service.

MR. HUTCHINGS, Q.C.: Okay, but ...

MR. REEVES: We use this to operate the capacitor bank.

MR. HUTCHINGS, Q.C.: Uh hum, yeah, the station service is being provided now, it's just not convenient.

MR. REEVES: It's not that it's not convenient, as Mr. Holden said, if we lose the station service in the middle of the night, there's nobody working at the facility of our customer down there, so we would have to go in there ourselves and that delays us getting that capacitor bank in service, and we will probably be into voltage problems on the east coast.

MR. HUTCHINGS, Q.C.: Is the customer not prepared to cooperate with you in facilitating that access when necessary?

MR. REEVES: That facility that was there, okay, is much, I guess the use of that facility now is much less than what it was at one point in time.

MR. HUTCHINGS, Q.C.: Yes, okay.

MR. REEVES: And I guess they're reluctant to invest the dollars that would be required to provide us with a reliable service for that station service.

MR. HUTCHINGS, Q.C.: If we can look please to B-48, this is installation of motor drive mechanisms on 10 disconnect switches at the Sunnyside terminal station and it seems to have a safety implication. Again, is this one of many, or ten of many switches in a similar situation or is this a one time project?

MR. REEVES: This is the first of two or three years worth of work which we intend to propose for following years and right now the switch is in Sunnyside and we have in our minds to motorize, to put motors on switches in other stations next year and then the year after providing we get approval.

MR. HUTCHINGS, Q.C.: You've put this forward as a single capital project with no plan for future, other ... each one will be a separate project when you do each station, is that what you're considering?

MR. REEVES: That's right, they're all individually discrete. Sunnyside here is addressed in this proposal and there will be other stations addressed in other proposals.

MR. HUTCHINGS, Q.C.: How many switches in all do you anticipate before you're finished?

MR. REEVES: I can't give you the exact number. I can give you an approximation.

MR. HUTCHINGS, Q.C.: Sure.

MR. REEVES: Probably about another eight or ten switches in the following years in other stations.

MR. HUTCHINGS, Q.C.: Yes, eight or ten per year?

MR. REEVES: Pardon me? No, eight or ten in total.

MR. HUTCHINGS, Q.C.: Switches?

MR. REEVES: Yes.

MR. HUTCHINGS, Q.C.: Okay, because there's ten in this one.

MR. REEVES: There's ten in this one, this is the biggest station.

MR. HUTCHINGS, Q.C.: Okay, so there's only another eight or ten in total which might be another $200,000 over the next four or five years.

MR. REEVES: Whatever that cost comes out to be estimated at.

MR. HUTCHINGS, Q.C.: Yeah, okay, alright, B-122, these are Mr. Reeves' vehicles. I guess the criteria are pretty well all laid out there and my question is is this essentially what we can anticipate as an annual amount, somewhere between $1.2 and $1.6 million for replacement of vehicles on an ongoing basis?

MR. REEVES: For these types of vehicles, that's a rough estimation, yes, it might be up or down in one year, but not by a substantial amount.

MR. HUTCHINGS, Q.C.: Have you done, has there been any outside study of the requirement for vehicles at all, I mean ... and the utilization of vehicles, any studies done to ensure that all these vehicles are necessary?

MR. REEVES: Did you say outside study?

MR. HUTCHINGS, Q.C.: Yeah.

MR. REEVES: No, I guess what we have looked at inhouse as best we can, but our workforce is not decreasing to the stage that we can eliminate a lot of vehicles and most of these vehicles are associated with line crews, mechanics, electricians, supervisory personnel, both from TRO and generation, they have mechanics as well in remote plants, so unless you actually can divide the facilities, then there's going to be a requirement of these vehicles.

MR. HUTCHINGS, Q.C.: There are a number of projects, and B-50 and 52 are examples of them, which are referred to as annual allotments. In the absence of anything to the contrary we can assume that, you know, these sorts of numbers for each of these are going to be recurring year or year?

MR. REEVES: That's correct, and we've been presenting those to the Board for a number of years now because we have a number of concerns there and we need to address those as they come up. It's a problem (inaudible) and the instrumentation, instrument transformers.

MR. HUTCHINGS, Q.C.: And I take it there is a policy with respect, for instance, to instrument transformers that at a certain point they come up the line for replacement?

MR. REEVES: Not so much those, the instrument transformers, there is a test that we can do on them, like we can test the secondary voltage *(phonetic)* and that, and we can determine if there is some sign that they will be in imminent failure. Other times they just fail in service. The lightning arresters is more, I guess, associated with your comment, is that we have typically been replacing those as they fail, but from working with other utilities and that, we, and the manufacturers, I guess there's a shorter failure rate, or shorter life than we anticipated so we may be starting to replace some of those before they actually fail.

MR. HUTCHINGS, Q.C.: Okay, alright, thank you, gentlemen, those are all the questions I have, Mr. Chair.

MR. SAUNDERS, CHAIRMAN: Thank you, Mr. Hutchings. Ms. Newman?

MS. NEWMAN: I have four or so questions. The first one is, I wonder if you could confirm for me, I've asked this question of the earlier panel and I do want you to confirm for me that Hydro is seeking approval of projects for 2003 only for those allotments in the project costs that are in the category of 2003, and that Hydro will come back and approve, seek approval for those portions of these projects that relate to future years.

MR. REEVES: That's correct, yes.

MS. NEWMAN: Okay, I wonder if you could take a moment and take us through, I don't know which of you would be better to do this, an explanation of the demand side management analysis that's here in a couple of these items. I'm looking to page B-73, there's several others, B-72, B-80, B-81, I'm just looking for a little explanation as to what this all means, so we can start with B-72 perhaps?

MR. REEVES: If you wouldn't mind, probably B-87.

MS. NEWMAN: B-87 is the best?

MR. REEVES: It's one that I went through personally and to be sure I understood, and I should say right from the outset here is that these were done by another section under Mr. Haynes' direction, actually in the planning section but I'm quite prepared to answer those questions as best I can.

MS. NEWMAN: Okay.

MR. REEVES: If you look at the fuel storage which is the one for Postville, where we know that we have a requirement because of load growth that we're going to need more storage, okay, and what we're saying, about halfway down through the page here, that our criteria for Postville is that we need to have nine months storage available in the winter so that in the eventuality of a late spring, then we've got enough storage to get us through the period of time. Right now, and that's what is being forecasted for 2003/2004, our nine month fuel storage capacity currently is 1,055, so as you can see we have a deficit there of a 123, okay, which is outlined in the first year, under required energy savings for capital deferral, so what we ... under the demand side management, we would have to save 123 megawatt hours in order to defer this project. The cost of the project is $77,700. Our economic analysis people, they determine and have come up with a factor of what we can spend of that capital dollars to defer it by one year, it's 4.5 percent. If we can defer it by two years we can spend 8.8 percent of the capital project and so on, 12.9 and so on. So we go to the calculation and you see that if we use what is readily available, which is domestic hot water retrofitting, or compact florescent lighting, then you go down and you see that even inputting those into the community of Postville, we are going to be shy by 109 megawatt hours of what we had to save. We wanted to achieve 123 savings, okay, we are only able to save 13.1 megawatt hours, so therefore we're shy by 109, so we will, if we only did demand side management in this location, we would not have enough fuel to have our nine month criteria met, so that means that we cannot go with demand side management in this particular location, and if you'll note in year two and in year three, we have similar deficiencies, so that's my understanding of how this should work. Did that explain for you what ...

MS. NEWMAN: Yes, yeah.

MR. REEVES: Did that answer your question?

MS. NEWMAN: So then you take that negative position and you say, well demand side management is not an effective approach to ...

MR. REEVES: If that number had come up positively, we could have done demand side management and we could have delayed it. Demand side management is normally not a replacement, it's only a delay.

MS. NEWMAN: And you mentioned that you were having load growth in Postville, what's the explanation for that?

MR. REEVES: There is a load forecast there if I'm not mistaken. It would just be, I guess, normal load growth in that community because of, more than likely it's tied to the fishery or whatever type thing, you know.

MS. NEWMAN: So you don't have the specifics on that?

MR. REEVES: No, I don't have the specifics either, I don't think it's stated here.

MS. NEWMAN: Can I refer you to B-122 and IC-9.

MR. REEVES: IC-9?

MS. NEWMAN: Okay, the question in IC-9 was to do with the number of years over which the vehicles were depreciated, and I wonder if the answer, it seems to me that the answer is inconsistent with what you'd find on B-122, and I wonder if you can explain if it is inconsistent, and if not, then what the distinction is.

MR. REEVES: Just on ...

MS. NEWMAN: It says that all cars, vans, medium, and heavy trucks are depreciated on a straight line basis over five years.

MR. REEVES: Did you say PUB-9, or IC-9, I'm sorry.

MS. NEWMAN: IC-9, yeah.

MR. REEVES: These are depreciated, you're saying, over five years, all cars, vans, and medium trucks, straight line over five years, that's correct, and we have a five to a seven year service life, is that what you're referring to?

MS. NEWMAN: Yeah, I'm looking at the chart where it says medium and heavy trucks are seven to nine years.

MR. REEVES: Yes.

MS. NEWMAN: Is that a different standard we're ...

MR. REEVES: My understanding is that as Mr. Roberts on the stand last year gave evidence on how our economic and service life was reviewed, and there was changes made for the cars and pick-ups and that, and light trucks, but there was no change made to the heavy trucks, even though they do have a longer service life, so they are still written off, as I understand it, for the shorter period of time.

MS. NEWMAN: So the medium and heavy trucks are for five years?

MR. REEVES: Economically, yes, written off, yes, even though they have a service life of seven to nine.

MS. NEWMAN: And I wonder if you could explain, this is my last question for this panel, I wonder if you could explain the procurement process for vehicles? How do you go about purchasing the vehicles, do you put them out to tender or ...

MR. REEVES: We put them to tender and we accept bids, do the evaluation, and you'll also notice that we also, starting this year, we also go out and ask for the people to bid on leasing as well as purchase, and we do an evaluation and this past year we purchased all our vehicles as the comparison came in in favour of purchase.

MS. NEWMAN: That's all the questions I have, Mr. Chair.

MR. SAUNDERS, CHAIRMAN: Thank you, Ms. Newman. I think last time we went out of sequence here a little. Do you have any redirect?

MS. GREENE, Q.C.: No, I have no redirect, Mr. Chair.

MR. SAUNDERS, CHAIRMAN: Okay, Mr. Powell, or Commissioner Powell?

COMMISSIONER POWELL: I don't have a lot, just a couple of notes. Just on B-44, replacing 125 volt battery banks in the frequency converter, which brings back memories, is that a specific cost assigned to Krueger *(phonetic)*, as it relates to that issue ... I can't remember ...

MR. REEVES: My understanding that right now, you're really calling on my memory right now, but all the costs associated with the frequency converters will be specifically assigned, either directly or indirectly in their rate. I really can't respond to that, but they are specifically assigned, yes.

COMMISSIONER POWELL: So when you do a project like that and you have a specific customer doing it, do you sit down in conjunction with them or do you just ...

MR. REEVES: Not always, it depends. Sometimes we do it and more times we don't. If it's a straightforward issue that we, it requires to replace, then we not always do, but I guess because of discussions that we've had last year at the rate hearing, we are going to be, I guess, talking more closely with the people who own the mill out there in regard to the specifically assigned charges, and as you'll remember, we recently had a transformer fail out there and we were extensively talking to them about it at that point of time.

COMMISSIONER POWELL: B-46, the Long Harbour terminal station, the note that I made when I was going through it, and talking about the inconvenience and it's $83,000, and you mentioned that you've had discussions with, from a costing point of view, and how long, I mean how much inconvenience do you have that you can run up $83,000, I mean in terms of recovering this?

MR. REEVES: It's no so much of an inconvenience, it's just that if we lose say the, our station service say at 10:00 at night, and we require the capacitor to be in service for voltage support, and we can't get a hold of somebody from their end until, say 8:00 the next morning, and then they may have to go looking for people that they don't have on staff ... they have a very minimum staff there, maintenance staff, so we could be, you know, a long period of time, in our opinion, trying to get our station service back to get our capacitor banks stabilized.

COMMISSIONER POWELL: Just to access the building, getting it back is not a big problem, it's just access.

MR. REEVES: Accessing the building, now there's been some suggestions that we actually go in there with our staff and actually do the maintenance, and that, to me, is risky as well. Our people are not familiar with their site, and as Mr. Holden has said, their site is deteriorating because there's not a requirement to keep it up, you know, so this is where we find ourselves right now, and we feel the best thing to do to ensure our reliability is to have our own station service.

COMMISSIONER POWELL: B-48, putting motorized ... is there any labour savings associated to this project, or is this strictly a safety ...

MR. REEVES: This is strictly safety.

COMMISSIONER POWELL: Strictly a safety thing, there's no significant labour saving by putting, motorizing ...

MR. HOLDEN: No, the point here is that in order to operate these switches now, they're manually operated disconnects, and in order to operate them now, you have to get in under the switch and operate the handle, and that presents or creates a safety hazard for the man who's doing it, and with the motor operator on the switch, the man can be removed from the disconnect inside the control building, open and close the disconnect, without being exposed to that safety hazard.

COMMISSIONER POWELL: B-43, replacing the digital fault recorders at Holyrood, you say there's 32 of them, and they're only 11 years old and the technology is outdated, you're going to spend $75,000. Is this one of those things that you can get into a contract with somebody and lease them for five years and then they get replaced as opposed to ... is that an option or is that a ...

MR. HOLDEN: That's not an option here. This is a specific piece of equipment that's tied into the protection control system in Holyrood terminal station, and it will record events and faults at that station. It's specific to the utility industry. It's not something that you could lease, and it provides then for us a remote indication, a remote interrogation flexibility so we can respond better to faults and troubles in that station and correct the troubles.

COMMISSIONER POWELL: I was struck by the fact that it's only 11 years old and it appears it hasn't worn out, it's just the technology dated it and ...

MR. HOLDEN: Yeah, it's just not working the way it's supposed to work, and it's outdated, it can't be remotely interrogated.

(4:30 p.m.)

COMMISSIONER POWELL: Yeah, and B-54, on the transmission and rural operations, you said an annual

allotment based on past expenditures to new customers in the various components of your rural system, and you're using historical dollars. Listening to the media is that there ain't any new customers out in rural Newfoundland so if you go on the historical data you're going to be overstating. How do you rationalize that with this?

MR. REEVES: You are right, and that's what you will hear in the media, but in some of our communities, and some of them are actually isolated communities, that I guess because of the fish industry and the catch that they're currently at, we are having load growth in some of our communities, and there are, we are finding that we are having, you know, new customers all the time, and what we find is that in, as a for instance, in Labrador, where there's the prospects of Voisey Bay, that's causing us load growth in Happy Valley-Goose Bay, so while we may not have the dollars right as to where they're going to be spent, typically we've been not too far off. If anything, we've probably underestimated the last couple of years for load growth, which is surprising and I agree with your comment.

COMMISSIONER POWELL: Yes, okay, that's all the questions I have, Mr. Chairman.

MR. SAUNDERS, CHAIRMAN: Thank you, Commissioner Powell. Commissioner Martin?

MR. MARTIN, Q.C.: Just one or two that may have been answered by now, I don't know. I've got a question on B-59 and B-64, the ... I was wondering if there was any duplication there on the lines L-1, as referred to in both places.

MR. REEVES: B-59 is work on L-1 in the St. Anthony distribution system, and B-64 is work on L-3.

MR. MARTIN, Q.C.: Alright, they're different lines.

MR. REEVES: Pardon me? They're different lines, yes.

MR. MARTIN, Q.C.: Okay, and B-64, again, I don't know if my figures are correct, but it looks like each pole costs $5,071 for, I think it was a total of 168 poles.

MR. REEVES: That's correct.

MR. MARTIN, Q.C.: I mean I don't know if that's an unreasonable figure or not, but it seems to be expensive per pole, I think the costs works out to $5,071.

MR. REEVES: Yeah, well you have to purchase the pole, you have ... you know, and these will be done under contract, so we go to contract for it and get the lowest price for contracting. What may be driving this up, what you're thinking about is that these poles would not, say, be all in the one location, they're in different locations, so there are probably a little higher mobilization costs associated, where if you were doing a line, the costs may be down per pole.

COMMISSIONER POWELL: Do you put up the pole and wire it? My understanding from the Power contract, the actual putting the pole up, and they just take over once the pole ...

MR. REEVES: We do it somewhat different than Newfoundland Power. What we typically do is that, like in one of them here you'll see distribution upgrades and there's poles to be replaced on the distribution upgrade, there's a sporadic pole here and there. We will get our crews to do that, they're in there doing inspections and they'll continue on with the installation of the pole, and they'll install the pole, they'll adjust the pole, they'll put the wire on it and they'll do everything. When we do pole replacement, like on B-64, we will contract out all that job ... the placement of the pole, we will supply the pole because we have better prices for poles, but we will expect the contractor to put the pole in, dress the pole, and put it in service, and all we'll do basically is the inspection to see if they performed it. Newfoundland Power, as you stated, I think they have a contractor to put in all of their poles, and then they do all the dressing and energizing themselves, so it's a little different way that we do it, that's all.

COMMISSIONER POWELL: So a significant portion of labour in that is external.

MR. REEVES: This would be an external contractor doing this, yes.

COMMISSIONER POWELL: And the 95 is your internal inspection, is it?

MR. REEVES: That would be our inspection, isolation ... we would have to do some isolations and whatnot to allow our contractors to work on that.

COMMISSIONER POWELL: Sorry about that, Mr. Martin.

MR. MARTIN, Q.C.: A-2 and A-7, tools and equipment under general, $850,000. At A-7, under tools and equipment, purchase and replace tools and equipment less than $50,000, $306,000. Replace light duty mobile equipment less than $50,000, $544,000, for a total of $850,000. There's nothing indicated for future years, and I was just wondering what was included with those two items, and specifically with the mobile equipment, is there any double counting there with vehicles?

MR. REEVES: No, there's not, no. Basically the $306,000, I think you asked about that one as well, is that that would be ongoing tools that we would have to replace. I think you stated with Mr. Haynes and his panel, is that most of our tools will be bought, but there is breakage, like line tools for our line workers and the like, mechanical, (inaudible) break and that, so this would be the replacement of our tools for our workforce. Under the $544,000, light duty mobile equipment, that basically covers snow machines, ATVs, unfortunately in the business we're in, we can't buy one piece of equipment to transport our line workers over the lines, so we have to have skidoos and ATVs for them. Pole trailers, skidoo trailers, equipment for transporting our ... equipment transport trailers, backhoe attachments for one of our pieces of equipment, and state body for one of our line trucks, so no, there would be no double counting in here, and each of those would have different service lives.

MR. MARTIN, Q.C.: I didn't look at last year's budget, but I was wondering if that is an annual thing. Is that an average figure that we can expect to appear in the capital budget every year?

MR. REEVES: I would say you will see something there every year. It will probably vary up and down depending on the particular year as to the age of the equipment and that, but you will typically see numbers in there, yes, and this would be right across the province, you know, including Labrador and right from east to west and up the Northern Peninsula, so that's for all of our workers.

MR. MARTIN, Q.C.: Alright, that's ...

MR. SAUNDERS, CHAIRMAN: Thank you, Commissioner Martin. I just have a couple of questions. What is the, what's the status of the replacement of the Holyrood sewage *(phonetic)* system? I came across that somewhere in here, and ...

MR. REEVES: Yes, and Mr. Haynes would have been the ...

MR. SAUNDERS, CHAIRMAN: He's the man.

MR. REEVES: He's the man.

MR. SAUNDERS, CHAIRMAN: I missed it.

MR. REEVES: I wish I knew the answer.

MS. GREENE, Q.C.: That was one that we asked for for separate approval.

MR. SAUNDERS, CHAIRMAN: Was it?

MS. GREENE, Q.C.: Yeah, after ...

MR. SAUNDERS, CHAIRMAN: I had a note here at the end and I wondered where it came from, but I ...

MS. GREENE, Q.C.: It is on schedule, and it is on budget, and there was a separate ...

MR. SAUNDERS, CHAIRMAN: Yes, it's on Section F.

MS. GREENE, Q.C.: Yes, it would have been there showing up as an addition to the capital budget for 2002 that we approved, so it is, you're right, it is in that report because it was an addition to the 2002 capital budget after the conclusion of the general rate hearing.

MR. SAUNDERS, CHAIRMAN: Right, right. Harbour Deep, is that a bad word to bring up?

MS. GREENE, Q.C.: We're hoping for news from the Board soon.

MR. SAUNDERS, CHAIRMAN: What's the intention with respect to the unit coming out of there? I think I saw something that you were going to reassign it somewhere?

MR. REEVES: That's correct, yes, as you would also know, we had a fire a Rencountre East.

MR. SAUNDERS, CHAIRMAN: Yes, Rencontre East.

MR. REEVES: Okay, and we were dealing with the immediate problem of trying to get through this winter. We have power in there right now, and but we feel for our criteria for meeting the loss of the largest unit, we

need an additional unit there, and that's one that we're anticipating to bring in from Rencountre East. In Harbour Deep, there were four units. It had a peak at probably around 300 kilowatts. We were able to meet that with our four units and be able to stand the loss of our largest unit. The load in there now is probably down to 30 kilowatts from the 300. A couple of weeks ago it was probably 50, so we feel that our service that we are providing in Harbour Deep, until we get the order from the Board here, is not jeopardized at all by taking out one unit, and that's what we're currently in the process of doing.

MR. SAUNDERS, CHAIRMAN: Okay, just two other updates. I didn't see any reference in your capital budget for 2003 to anything to do with wind generation. There was a project that was commissioned, I don't know if it was commissioned by Hydro, I don't recall now, but there was some experiment being done on the Bonavista Peninsula somewhere.

MS. GREENE, Q.C.: Yes, Mr. Chairman.

MR. SAUNDERS, CHAIRMAN: Bonavista North maybe.

MS. GREENE, Q.C.: We did, and it was included, there was evidence during the general rate application with respect to that. Mr. Haynes would be able to speak to that. We, as management, have not actually received the evaluation from our system planning department with respect to their recommendation.

(4:45 p.m.)

MR. SAUNDERS, CHAIRMAN: Okay, that's really all I wanted to know, as to where it was, yeah, that's good.

MS. GREENE, Q.C.: My understanding is it will be coming to management before Christmas.

MR. HAYNES: Next week hopefully, Mr. Chairman.

MR. SAUNDERS, CHAIRMAN: And I think the other one was answered. That's all I have, so where are we in respect of final submissions?

MS. NEWMAN: Well, Mr. Chair, I would propose that we come back on Monday morning at 9:30. I understand that Ms. Greene would go first, followed by Ms. Henley Andrews. I do not propose to make closing submissions, so then there would be reply from Ms. Greene. I expect we could easily tidy that up in the morning.

MR. SAUNDERS, CHAIRMAN: So Monday morning at 9:30 is fine with both parties?

MS. GREENE, Q.C.: Just a question for clarification, are there any time limits with respect to the length of argument, as there were, there usually is previously?

MS. HENLEY ANDREWS: I don't expect that it will be necessary because I don't expect the argument will be that long anyway.

MR. SAUNDERS, CHAIRMAN: I'm sure we can clue it up in the morning, can't we?

MS. HENLEY ANDREWS: Yeah, we can. The only possibility that I just want to put out now is that Mr. Hutchings is trying to rearrange his schedule. He can definitely be available on Monday morning, but there is a possibility, depending on the flights, that he may ask to start a little later than 9:30, and I just want to put that out there now and we'll let the Board know if we're going to make that specific request.

MR. SAUNDERS, CHAIRMAN: Yeah, we have two of our commissioners coming in from the west coast as well, so ...

MS. HENLEY ANDREWS: Yeah, he's hoping to avoid having to come in and spend Sunday night.

MR. SAUNDERS, CHAIRMAN: Oh, I see. Okay, well then we'll proceed as if 9:30 on Monday morning is the commencement time and date.

MS. NEWMAN: Mr. Chairman, before you close, I just wanted to clarify that we will not have overnight transcription service for the transcript and it will be available Friday, we hope, is that okay?

MS. GREENE, Q.C.: Friday, this is Tuesday?

MS. HENLEY ANDREWS: Yeah, I'd like to have it by Thursday so that we can use it for preparing our argument.

MS. GREENE, Q.C.: It will be required for preparation for argument so ...

MS. NEWMAN: We'll do our best to get it to the parties by Thursday.

MR. SAUNDERS, CHAIRMAN: Thank you, Mr. Holden, Mr. Reeves.

MS. GREENE, Q.C.: Thank you very much for agreeing to sit late, to the Board and the parties.

MR. SAUNDERS, CHAIRMAN: Thank you. Thank you, Mr. Osmond. Good luck in your retirement.

(hearing adjourned to November 4, 2002)