Atomic Energy of Canada Limited:
Environmental Assessment
Screening regarding the
Proposal to decommission the
fuel storage and handling bays
at Chalk River Laboratories

MR. LEBLANC: On the agenda today is the hearing on the Environmental Assessment Screening Report regarding the proposal to decommission the fuel storage and handling bays at Chalk River Laboratories.

We welcome the representatives from Atomic Energy of Canada Limited that are joining us by teleconference.

Is Mr. Klukas on-line? Are you with us, sir?

MR. LANGE: Yes, this is Bruce Lange speaking from AECL.

MR. LEBLANC: Mr. Lange?

MR. LANGE: Yes, and I have with me four other staff from AECL. That includes Doug Killey, who is a hydrogeologist and will address questions concerning any things related to the plumes; Daniel Grondin who is involved with the licensing staff; Steven Kenny who is the Facility Manager for the bays that are being

decommissioned and Martin Klukas who is involved with the preparation of the EA.

MR. LEBLANC: Thank you very much for this precision.

The Commission Members have read the written submission filed by CNSC staff as outlined in Commission Member Document 06-H132, and we would now like to ask CNSC staff whether they wish to give a brief presentation or add anything to the written submission. I will then ask the President to pursue.

THE CHAIRPERSON: Mr. Taylor, do you wish -- any comments that you would wish to add?

Written Submission from
CNSC staff

MR. TAYLOR: Yes, Madam President, I have a few opening remarks to make.

My name is Chris Taylor. I am the Acting Director of the Environmental Assessment Division within the newly formed Directorate of Environmental Assessment and Protection. With me here today are Mr. Claude David, Environmental Assessment Specialist; Mr. Miguel Santini, the Director of the Chalk River Laboratories Compliance and Licensing Division; Mr. Fred Taylor, a Project Officer in that Division and also some other members of our CNSC

staff to answer questions.

Also, as mentioned by Mr. Lange, over the phone we have with us today some AECL representatives.

Staff has presented for the consideration of the Commission a completed Environmental Assessment Screening Report for the proposed decommissioning of the fuel storage and handling bays at Chalk River Laboratories, Chalk River, Ontario, and that Screening Report is attached to CMD 06-H123.

The project involves the decommissioning and ultimate demolition of buildings 204A and B, which house these bays and the remediation of the immediate site of those buildings.

The purpose is to remediate the site for reuse in a manner consistent with its location in the developed area of the Chalk River Laboratories.

An important point for the Commission in this particular case is that the first part of the project; that is, the removal of the 204A bay water for treatment at the Chalk River Liquid Waste Treatment Centre and the physical separation between building 204 and the NRX reactor has already been completed. Now, in normal circumstances, the responsible authority may not authorize any part of a project subject to CEAA to proceed until the EA is complete and a positive conclusion in respect to

that assessment is rendered.

The initial works were authorized by CNSC staff due to an identified urgent need to reduce a risk of fire at the facility. It was determined that a fire in 204A bays could rapidly spread to the adjoining NRX reactor hall and lead to potential structural failures in that building. So a complete fire break, including within the bay trench was needed to mitigate that risk.

I point out that paragraph 7(1)(c) of the CEAA states that:

> "An assessment of a project is not required where [(c)] the project is to be carried out in response to an emergency and carrying out the project forthwith is in the interest of preventing damage to property or the environment or is in the interest of public health and safety."

And indeed this was the conclusion of CNSC staff in this case.

So CNSC staff is satisfied that the mitigation measures for this part of the project, as described in the Screening Report, were implemented by AECL and that they were effective in mitigating the potential adverse effects.

The conduct of the technical studies including the EA screening or the EA study report was delegated to AECL pursuant to section 17 of the CEAA. The Screening Report submitted for consideration by the Commission is based on information drawn from those studies. A draft version of the Screening Report was made available to the public for comment prior to its completion as well.

Other than this, staff will not be making a detailed presentation of the Screening Report. However, we are prepared to answer questions that you may have and, as I've mentioned and as I've indicated earlier, AECL is also available to answer any questions you may have pertaining to the project and any of the environmental studies that were delegated to them.

Staff is recommending that the Commission accepts the conclusions of the Screening Report, that is that the project take into account the mitigation measures is not likely to cause significant adverse environmental effects, and consistent with paragraph 21(a) of the CEAA, or the *Canadian Environmental Assessment Act*, proceed with the consideration of the licence application that includes elements of this project under the *Nuclear Safety and Control Act*.

Thank you. That completes our

presentation.

THE CHAIRPERSON: Thank you, Mr. Taylor.

Mr. Lange, is there anything that you would like to add at this time for the Commission before I open the floor for questions?

MR. LANGE: Yes, thank you, Madam Chair.

I think, just very quickly, we are pleased at the prospect of being able to proceed with this project; to decommission this whole fuel storage and handling bays associated with the NRX reactor.

I think, as you are aware and in reading the documentation, these bays were built back in the 1940s and then over the decades problems have manifested themselves.

The execution of this project will accomplish a number of things as Mr. Taylor has already indicated, it will allow us to, and has allowed us to, empty the bays and that the water in the bays was, in fact, the source of a plume of contaminated groundwater, that the source of that plume has now been removed. So that’s a very significant accomplishment in itself.

Also, as indicated by Mr. Taylor, the emptying of the bays will now allow us to proceed with establishing the fire break to establish those distances between the very close buildings and reduce -- mitigate

the potential for risk from fire.

It has also allowed us to gain a fair amount of experience in dealing with circumstances surrounding decommissioning such things as old bays and, I think it's also important to note that it gives us and has given us an opportunity to demonstrate fairly clearly to shareholders and stakeholders and perhaps even the public that we are indeed making physical progress on addressing some of the legacy issues of the Chalk River site that has been an area of concern in the past. We have heard that we do a lot of planning but not much work and now, in fact, I think we can demonstrate the opposite.

So we are keen on continuing with this project and look forward to the conclusion of the EA process. Thank you.

THE CHAIRPERSON: Thank you.

So we'll open the floor for questions. Dr. McDill, would you like to start?

MEMBER McDILL: Thank you.

I would have found it helpful to have had a bit of a timeline in the report, so I could see where things were going on, but without that, I'll start with a question on page 8 of the proposed EA screening report, which is referred to again on page 17 and then the same thing appears in Table 2, EC9. That's with respect of the

one metre of soil. It says, "AECL will explain the one metre limited building definition and briefly describe".

I wonder if some of that explanation could be given here?

THE CHAIRPERSON: And since this is a question to AECL, perhaps you could give Dr. McDill some timeline verbally?

MR. LANGE: This has to do -- just to make sure I understand the question correctly, Dr. McDill -- this is Bruce Lange speaking, for the record; the question is the one metre of boundary outside of the facility and the timeline for actually dealing with that material; is that correct?

MEMBER McDILL: I guess a more general timeline for the things that are mentioned in the EA, and my first question was with respect to the one metre of soil and where does that fit in the timeline?

MR. LANGE: Okay, good. Yes.

Again, Bruce Lange for the record.

The plan is that Phase I, which is putting the bays into a safe sustainable shutdown state, will be completed essentially with the emptying of the bays. That will then allow us to put covers all over the bays and set up ventilation systems and monitor the environment around and in the bays themselves. We will then proceed with

establishing the fire breaks, which will be accomplished towards the end of this year and into next year.

Once that’s accomplished, we will be into the Phase II, which is the monitoring and surveillance. We anticipate the monitoring and surveillance period will last until about 2021 and that the building and the bays and the surrounding soils and all the auxiliary facilities will be removed and the site returned to a state for further use by about, as I say, about 2021.

MEMBER McDILL: So the fire breaks go in 06-07.

MR. LANGE: No, that’s -- Bruce Lange for the record.

That is correct and, in fact, a lot of the activities associated with establishing that fire break are already underway.

MEMBER McDILL: Thank you.

And with respect to explanation of why only one metre of soil, not one and a half or two?

MR. LANGE: Oh, sorry, yes.

The one metre boundary is kind of an official, perhaps artificial, definition of where the responsibility of the facility manager for NRX ends. Beyond the one metre boundary, the responsibility resides with the site operations, nuclear operations folks; that

is, the people who actually work on the lines between the buildings.

So we will remediate to the extent that it is required. We won't stop at the one metre. That's just a definition of ownership.

MEMBER McDILL: Is that staff's understanding as well?

MR. DAVID: Claude David for the record.

Yes, that's our understanding.

MEMBER McDILL: Thank you.

My next question is with respect -- I'm trying to do this in some kind of sensible order here -- on the screening report on page, I think it's 91 -- it's the one after 90, yes, 91. That hole punch has taken it out -- on groundwater quality and Phase I, the description of the activities refers to once the waters are removed and the mitigation measures refers to continuous filtration of the bay water.

I wonder if you could explain how those work together?

MR. LANGE: Dr. McDill, you said that was on page 91?

MEMBER McDILL: Ninety-one (91).

MR. LANGE: We're struggling a little bit with the communications. I just wanted to confirm that is

indeed the case.

So this is -- "bay areas being cleaned will be isolated using existing watertight gates to minimize mitigation of re-suspended solids to leak."?

MEMBER McDILL: Yes, that's in "Mitigation" and under the description of activities it says, "once the waters are removed"; so once the waters are removed, you expect to have more water coming in or is it out of order, basically?

MR. LANGE: Yes, it's out of order. In other words, those mitigation techniques would be used during the process until the bays are actually empty.

MEMBER McDILL: Thank you.

And with respect to page -- now, we're onto Table 1, "AECL May 29th resolution outstanding issues" -- I'll try closer to the mike if the volume is not good. On page 3, "The Regional Municipality of Ottawa-Carleton was provided with a site tour".

Could I ask roughly when that was, and then when was their letter sent?

MR. LANGE: I believe that was in May.

Martin, do you know when the tour was given for the Ottawa-Carleton group?

MR. KLUKAS: I believe that was in the late nineties.

THE CHAIRPERSON: Sorry, could you repeat that? We couldn't hear you.

MR. LANGE: The late 1990s.

MEMBER McDILL: So you're assuming that a meeting from the late 1990s is still the Regional Municipality of Ottawa-Carleton's position, or am I misunderstanding you?

MR. LANGE: Bruce Lange, for the record.

The tour that would have been given at that time was part of an EA public communication process that we went through in anticipation of the preparation of the EA. Subsequent to that initiative, there haven't been anything in the way of formal consultations carried out with respect to this EA.

But I'll ask Martin Klukas to speak further on that.

MR. KLUKAS: Martin Klukas speaking.

There is just a correction. Public consultation activities were held in 2002 and these involved open houses, presentations to employees, letters to stakeholders. I believe Ottawa-Carleton was included in those letters to stakeholders, but I would need to confirm that.

MEMBER McDILL: Thank you.

I wonder if staff has any comment on that?

MR. TAYLOR: No, we don’t have any comment with respect to that particular meeting that was held.

MEMBER McDILL: If I could ask AECL, has there been any further contact with the RMOC more recently?

MR. KLUKAS: Martin Klukas speaking.

I don’t believe so.

MEMBER McDILL: To staff: Should there have been?

MR. LANGE: As I said, I believe in 2002, we did inform stakeholders who were interested in the project. RMOC would have been included. Had they requested additional information, the AECL would certainly have provided this.

THE CHAIRPERSON: I gather that -- I think probably a corollary, Dr. McDill, would be in the process of doing this work -- in the process of doing this work, you would have done the necessary consultation plan that would have offered an opportunity if anyone had been interested in this site to ensure that they had an opportunity to be involved.

I think what we're trying to figure out is, is it the fact they haven't commented there or been in contact since 2002, is that indicative of a lack of consultation on the part AECL or this process, or is it

that they have had an opportunity but have chosen to interact?

MR. LANGE: I would suggest they have had an opportunity but have not chosen to interact.

I would also like to -- CNSC can comment on this, but the screening report was made available for public review in May of this year and perhaps CNSC wishes to comment on their consultation with respect to the screening as well.

MR. TAYLOR: I am going to ask Claude David to comment on the public consultation that was led by the CNSC for this environmental assessment.

MR. DAVID: Claude David, for the record.

The draft screening report was made available for public review -- for a 30-day public review. That public review started May 29th, 2006 and ended June 23rd, 2006.

There was a notice of solicitation for public comments posted on the CNSC website. As a result of making this screening report available for public review, there were no requests for either the screening report itself and staff did not receive any comments from the public or stakeholders.

MEMBER McDILL: Thank you.

I will pass it on to my colleague.

THE CHAIRPERSON: Dr. Barnes?

MEMBER BARNES: I thought this was a relatively straightforward process and report and my comments or questions are rather specific. I'll just go through them in the document. I think that's the easiest way of doing it.

So I did wonder why NRCan had not been involved. I know it would be peripheral to their interest, but is it outside of their mandate completely, or did they simply decline to participate?

MR. LANGE: Bruce Lange, for the record.

Because the decommissioning of the Building 204 bays is in fact a significant component of the comprehensive preliminary decommissioning plan, NRCan, at least through that mechanism, has been pretty heavily involved with our plans for the decommissioning of that facility.

MEMBER BARNES: But I didn't see any reference to them in this document. For example, on page 3 where the three other departments, Health Canada, Environment Canada and Fisheries and Oceans Canada are listed and then Ministry of the Environment, Ontario, or in the disposition ---

MR. LANGE: Bruce Lange, for the record.

It's our understanding that CNSC staff had

made the selection as to who the other regulatory -- other federal organizations were that would review the EA.

MEMBER BARNES: It's just an observation.

Under page 8 which is the -- I realize this is in the scope issue, but -- 7.3 is the follow-up program and I wonder whether there was -- actually, no, I'll back off on that. I realize this is an issue -- let me just jump to page 3 of the -- I guess it must the screening report -- page 3 of the screening report, 2.4, the current status of the fuel storage and handling bays, second paragraph, indicate that the volume of sludge was estimated to be .5 cubic metres in 204A and .7 metres in 204B and, as I read it here, the work took five years. I wonder why it took five years to remove 1.2 cubic metres of sludge.

MR. LANGE: Bruce Lange, for the record.

One of the issues that we were dealing with in the 204 bays was that following sludge removal, we would see a follow-up of algae growth that would then re-populate the bay so that we would vacuum and then come back several months later and we would have seen more sludge forming as a result of the algae growth.

To address that issue, we finally ended up blocking out all the windows in the bays to prevent the light from coming in and actually finally adding hydrogen

peroxide to keep the algae growth down. So part of the problem was that the sludge kept reappearing and that was one of the reasons that it took so long to finally address that issue.

MEMBER BARNES: I won't comment any further about what you did with the hydrogen peroxide.

If I go on to page 7-8, which is the scope of the project, and you identify Phases I, II and III, and like Dr. McDill, I found it difficult to -- until I got through several times, finding out just how long Phase I, Phase II and Phase III was. So basically Phase II is a 40-year period and Phase I is relatively brief and Phase III is relatively brief, and in Phase II you indicate the routine monitoring of the building structure systems and radiation fields and then in Phase III there is a variety of activities that go at the bottom of 7 and onto the top of page 8.

I wasn't sure if you needed a monitoring component in Phase III. I don't think the word "monitoring" occurs at all. You are dealing with segregation, transfer, storage disposal of contaminated wastes and so on in the last bullet, as an example. You are conducting radiological surveys but it wasn't in the context of a long-term monitoring strategy.

MR. LANGE: Bruce Lange, for the record.

The anticipated approach on this is that the monitoring methodology used for Phase II, which would include things as groundwater monitoring and air monitoring, which simply continue on to the extent required into Phase III until ultimately that equipment could also be removed.

So the monitoring would definitely be a part of Phase III; I would think extremely important, in fact, to ensure that we weren't having releases as a result of those activities.

MEMBER BARNES: Since Phase III is going to take place about 45 years from now, does the document adequately state that, in your opinion, somewhere apart from this verbal comment?

MR. LANGE: Bruce Lange, for the record.

A couple of things I think that probably require clarification. The 40-year period was sort of the full range of time it was going to take from the decision to begin working on the NRX bays to the time that building 204 bays to the time that this structure was actually removed.

Our current plans are, as I indicated earlier in the comprehensive preliminary decommissioning plan that, in fact, the structure and the NRX bays will in fact be removed by about 2021. So we are talking about a

period of about 20 years or less, perhaps 15 years until those bays are actually physically removed.

On the monitoring and surveillance plan, there will be a storage and surveillance plan established for the 204 bays that has actual -- it will actually be incorporated into the licence.

So the commitments made for storage and surveillance in that plan will indicate the extent to which they will have to be extended into Phase III.

MEMBER BARNES: Okay. If I go on to page 14 of the screening report, 7.1.3.3 Fuel Storage and Handling Bays Metal Components, you indicate there in the first sentence that the 204A bays contain approximately 6,100 kilograms of metal components. Elsewhere, you indicate that you have a scrubbing process and so on, and yet when I see what is being transferred eventually into the Ottawa River through some of these processes, it's "A few grams".

So I would just like confirmation that, in truth, that is the limit of metal components that will get transferred into the Ottawa River through one process or another.

MR. LANGE: Bruce Lange, for the record.

Just to ensure I understand, the reference to the metal transfer to the river was largely referring,

I believe, to dissolved metals that may have been in the water.

MEMBER BARNES: Well, not if has a weight of grams. I would have thought at least it was expressed with zinc, aluminium and copper. It's repeated several times in the tables -- at the back Table 9.1.

MR. LANGE: Yes. Bruce Lange for the record.

That's correct and that's the discharges that will ultimately result from the treatment of the water in the waste treatment centre and the distillates and associated materials will lead to the release of some grams of metals such as copper and zinc. The 6100 kilograms referred to in 7.1.3.3 are actually steel racks and all, that were physically removed from the bay structure itself.

MEMBER BARNES: Yes. I understood that and I can see that clearly having a different disposition. But anyway, I just asked staff; you're content with that very low amount of metals that will end up in the Ottawa River? Correct?

MR. TAYLOR: Yes, that's correct.

Chris Taylor for the record.

MEMBER BARNES: At the bottom of page 16, where you're dealing with the water from the bays will be

transferred to the CRL waste treatment centre for treatment to reduce concentration of radionuclides in the water prior to release to the Ottawa River, total quantity of water to be transferred via the existing active drain to the WTC is estimated about 1370 cubic metres. So again, just some assurance that they will be full treatment, such that the liquids eventually released to the Ottawa River are well within regulatory limits.

MR. LANGE: Bruce Lange for the record.

Yes, that’s exactly correct. The water was transferred -- has been transferred to the waste treatment centre. The acceptance of that water by the waste treatment centre had to be agreed to by them before we could actually make the transfer. In other words, we had to meet their waste acceptance criteria before they would accept the water for treatment. Having accepted it, it then went through the liquid waste evaporator. The largest proportion of contamination, be it either radioactive or inorganic was retained and immobilized and the distillate from the liquid waste evaporator was then released to the river but in compliance with the waste treatment centre release levels.

Can I confirm that we’re still connected?

AECL, are we being heard at the CNSC?

(Technical difficulties)

MEMBER BARNES: … disagree with any comments, without me going to staff every time.

THE CHAIRPERSON: So is that clear, Mr. Taylor, that our expectation is that you'll raise your hand if you want to comment or disagree with anything?

MR. TAYLOR: Yes. We will do that. Thank you.

THE CHAIRPERSON: Okay. Mr. Lange, Dr. Barnes, I think we're connected again.

MR. LANGE: I'm sorry. Are we coming through now?

MEMBER BARNES: Can you hear me?

Yes. You can hear me?

MR. LANGE: Yes. Very good. Thanks, Dr. Barnes.

MEMBER BARNES: Okay. I'll just start that part again.

We've just been discussing the waste treatment centre and since we were on page 16, I'll go up two paragraphs in the middle of the page and just quote. And it goes back to my -- one of the concerns I had about the metal, the few grams of metal components that may go into the river, but this is part of the reason for my concern. In the middle of page 16, it said and still says:

> “Metal components will be cleaned underwater by jet scrubbing and wire brushing. They will be removed before draining the bay water pending radioactive survey and sampling and ALARA assessments.”

They, being the metal components as opposed to all the fine metal particles that were generated by jet scrubbing and wire brushing, which presumably remain in the bay water and that bay water then goes to the waste treatment centre, I presume. So do they have a capacity then, to remove those fine metal components from the cleaning process?

MR. LANGE: Bruce Lange for the record.

Yes, that is correct. They have a large bag filter on the unit side of the waste treatment centre.

Again, just a note that the process that they use is one of distillation, so any particles or non-volatile material that goes to the waste treatment centre, remains in the bottom of their evaporator. That material is then subsequently removed, immobilized and then placed in the waste treatment centre, in the waste managing areas. So it is only the distillate, the volatile components, that come off from the treatment process that are then subsequently released to the river.

MEMBER BARNES: My final point was on page 20 of the screening report, 7.5, Effects of Accidents and Malfunctions, 7.5.1, Collapse of Concrete Bay Walls, which I found potentially a little disturbing. And the last paragraph on that page, running onto the top of page 21, where you basically say that when you take the water out of the bay, then there's no pressures or strength from that inside and there is a potential for the walls of this building to collapse. And just to quote the last paragraph:

> "The assessment confirmed that the bay walls are structurally adequate to withstand the external soil pressures for dry soil. The analysis however, did show that the bays are not designed to withstand the external pressure of saturated soil and identified the need for temporary bracing in the walls in the vicinity of the leak where the outside soil is saturated. Temporary bracing will be installed while the water is being drained. After the bays are drained, the leak will have stopped and the water table outside will gradually

drop to its natural level, well below the base. Soil pressure of the dry will not pose a danger." (As read)

So I wonder if there could be a little more clarification about the -- how serious this threat is. I can't imagine it's something you want to see as part of this process. In particular, I wonder why it quotes, "temporary bracing will be installed while the water is being drained" as opposed to before it's drained and whether you really also need it. My second question then, is whether you needed to install some kind of de-watering system around the outside of, at least part of this building then, so that those pressures are not built up?

MR. LANGE: Bruce Lange for the record.

I'll ask Steven Kenny to describe the process that they used in bracing and then draining the bays in the process of taking the water out.

MR. KENNY It's Steven Kenny.

Certainly the draining of the bays, we did install a bracing prior to taking the water down. It was installed -- they're metal braces. They're engineered and put in place to support any movement of the walls if they so chose to. There's another point ---

THE CHAIRPERSON: Could you approach the telephone more? We can hardly hear you.

MR. LANGE: We're having the same problem too.

MR. KENNY: Sorry, it's Steven Kenny.

During the removal of water, the braces were installed prior to us pumping any water out of the base, and as the water level dropped, the braces were well in place long before we got to a point where the engineering report indicated that it would cause damage.

The other point I wanted to make was as the water was removed, we had an engineering report that indicated that -- and pictures on top of it from whenever the bays were constructed. The bays were built on top of the ground and then they were bermed up to the top level of the bays. So the groundwater -- maybe Doug Killey could comment on this, but the groundwater table is below the bottom of the base of the bays.

MR. LANGE: Bruce Lange, for the record.

I'll just ask Doug Killey to expand a bit on his expectations with respect to how long it would take for that perched water table to go down so that the walls -- so that the soil outside of the bays indeed are no longer water saturated.

Doug.

MR. KILLEY: Doug Killey here.

There was a small region around the

vertical rod storage bay portion of the 204 bay system, which is where the suspected leak is believed to be located where the soils immediately adjacent to the bays have been saturated because of that leak. The permanent water table is several metres below that point and below the bottom of the bay structure.

So as Steve Kenny had indicated, once the leak is terminated, the first water table will drain down.

The backfill around the bays consists of stands and we haven't been asked to and we haven't actually been monitoring water levels in the fill adjacent to the bay.

My expectation, however, is that the first water table probably has dissipated at a rate fairly close to the rate at which the bay water has been removed and it's most likely that in fact those soils are unsaturated now.

MEMBER BARNES: I notice that all your responses are in the past tense whereas the document is written in the future tense.

Does this mean that most of this work has been done already?

MR. LANGE: I'm sorry, we didn't hear that last comment. Could you repeat that, please?

MEMBER BARNES: Yes. I just said I notice

that most of the responses were in the past tense, that the bay water was withdrawn, various activities were accomplished like the bracing, whereas the document we're looking at is all in the -- that these activities will take place.

Has most of this work been done?

MR. LANGE: Bruce Lange, for the record.

Yes, as indicated by Mr. Taylor at the beginning of the presentation, because of a concern about the potential for fire, the dispensation was given to just remove the water from those bays so that we could begin the process of establishing the fire break.

The difficulty is that because of the freezing conditions, the water had to be removed before we could remove the building structures to provide the necessary fire break separation.

MEMBER BARNES: Okay. Sorry, that was my error. I had heard the comment but I hadn't correlated it with this issue that I was trying to raise here.

MR. LANGE: Bruce Lange, for the record.

In essence then, at the conclusion of this everything worked as anticipated and the waste treatment centre found no problems with the liquid being transferred over. There were no concerns with the structural stability of the walls and the bays are now, for the most

part, dry and covered.

THE CHAIRPERSON: Mr. Taylor, did you want to comment?

MR. TAYLOR: Yes, thank you.

It's Chris Taylor, for the record.

Dr. Barnes, another fact with respect to the perched water table on the outside of the walls, the soil or the land drops away -- quickly away from the outside of the bay wall. So there's a fairly steep slope and not a lot of soil against the bay wall. It slopes away quite quickly, and given that the soil is relatively sandy, the expectation would be that that perched water table which was being sustained by the leakage in the bay would fall quite rapidly. It's not a flat area of land.

THE CHAIRPERSON: It's Linda Keen.

My comments will not surprise Mr. Lange. As you know, I'm quite anxious to get the decommissioning work done on this site as much as possible. I think it's more of a comment than a question.

You indicated already some acceleration of the timetable that has been originally looked at. I'm assuming, as my comments have been on other AECL projects, that there is a clear approach made to ensure that work proceeds as expeditiously as possible and that delays do not take place any more than necessary. This, as you are

aware, is also part of the CNSC policy on regulatory policy and waste management as well.

So I guess what I would ask for, is your assurance that this is not at the bottom of the pile in terms of AECL's priorities?

MR. LANGE: Bruce Lange, for the record.

No, certainly at the top of the pile was our ability to get those bays emptied. We knew that we had a potential source of a plume that we wanted to get addressed. So the highest priority surrounding the NRX bays or the 204 bays was in fact getting that water out of there. So that has now been taken care of.

And it also goes probably without saying that the agreement of the Canadian government to significantly enhance the funding for these activities has indeed allowed us to undertake these activities sooner than we had anticipated.

So, yes, this effort is in fact indicative of our ability or our desire to accelerate the program.

THE CHAIRPERSON: That was really my question, was the monitoring of the plume, as you mentioned.

What exactly is the plan to the monitoring now that the water has been removed?

MR. LANGE: Bruce Lange, for the record.

I'll let Doug Killey address that, about the specifics of the Monitoring Program.

MR. KILLEY: Doug Killey speaking.

The ---

THE CHAIRPERSON: Again, we've lost you.

MR. KILLEY: Sorry. This is Doug Killey here.

The current groundwater monitoring associated with the NRX rod bays, the ongoing program consists of quarterly sampling near the CRL waterfront, down gradient of the NRX bays and of other facilities in the built-up portion of the site. That program, to my knowledge, will continue indefinitely.

THE CHAIRPERSON: But do you expect to see some changes as a result of the removing of that water?

MR. KILLEY: Doug Killey here.

We do expect to see some changes as a result of draining the bays. The current or the radionuclides that we have seen down gradient of the bays are tritium and strontium-90.

Tritium concentrations have decreased by approximately in order of magnitude over the last four years or so primarily as a result of separation of the NRX and NRU rod bay system, but with the NRX bays now being dewatered, we'll certainly be expecting to see the tritium

concentrations decreased to local background values within approximately two years is our estimate for groundwater travel time from the bays down to the monitoring wells near the river.

Strontium-90 concentrations have not shown any particular change as of yet and we don’t expect to see any dramatic decrease for many years to come because the strontium is reactive with the solids between the bays and the river and a substantial fraction of what we currently observe in the groundwater is already within the zone of saturation.

Again, however, in the long term we will expect to see decreases of strontium-90 concentrations.

THE CHAIRPERSON: And I imagine that CNSC staff will expect that too?

MR. TAYLOR: Yes, Chris Taylor, for the record.

In fact, the continuing monitoring and assessment of the plume is explicitly part of the follow-up program to this environmental assessment as set out on page 97, section 10, and including the requirements -- assessing the requirements for capture and treatment of the groundwater plume, if necessary, and staff is continuing to monitor AECL’s activities in respect of the plume. And if you wish to explore that with the

specialists, with staff, Dr. Shizhong Lei is here to answer any specific questions.

THE CHAIRPERSON: My next question is -- I certainly -- one of the reasons that the CNSC Commission was very active, I think, in the decommissioning plan for this site was the issues of historic waste and the safeguard program. Would CNSC staff like to comment if there's any issues that they see at this point with regards to safeguards?

MR. TAYLOR: Chris Taylor, for the record.

I'd like to ask Rowena Maxwell to come forward and address issues related to safeguards.

MS. MAXWELL: Rowena Maxwell, for the record.

There are no issues related to safeguards with this project. We have been keeping the EA apprised of all phases of the project and they're aware of what's going on.

THE CHAIRPERSON: My final comment is, because this is such a broad project and such a long-term project, and I took into account really my colleague's comments about knowledge management and information management on this, I think it would be appropriate for AECL to consider offering regular updates to the Commission at appropriate times on the whole project. I'm

not talking about the licensing issue but you're coming forward on licensing of this, but I think to keep it in a broader perspective, including timelines and including project charts and including how this relates to other projects, I think that would be an important knowledge management for AECL, but I think the Commission would appreciate that schedule and that timing, that kind of content would be discussed by AECL with the CNSC staff and brought forward, I think, at the licensing of this component of the project, if so accepted.

MR. LANGE: Yes, this is Bruce Lange, for the record.

We are very much in agreement with that and, in fact, have already established a number of mechanisms by which to ensure that. We did, for example, present, just I suppose out of interest, the fact that we had actually started working on the bays at the licence hearings, but we do have a five-year decommissioning implementation plan that we have committed to updating and briefing CNSC staff on on a regular basis. So that will provide a very good mechanism by which to provide that overview and in the context of all projects going on.

THE CHAIRPERSON: And to the Commission as well to CNSC staff, I'm suggesting.

MR. LANGE: Yes, I think -- Bruce Lange,

for the record.

Yes, I think particularly as part of our mid-term report and other formal reporting mechanisms to the Commission.

THE CHAIRPERSON: Thank you.

Are there any further questions from Commission Members?

Well, that then completes the record for the hearing on the matter of the Environmental Assessment Screening regarding the proposal to decommission the fuel storage and handling bays at Chalk River Laboratories.

The Commission will deliberate and will publish its decision in due course. It will be posted on the CNSC Web site and will be distributed to participants.

So thank you very much to AECL, by phone, and CNSC staff for your attendance today.

We will be taking a 15-minute break and then we will be starting with the next hearing. Thank you very much.

MR. LANGE: Thank you very much.

--- Upon recessing at 3:39 p.m.

--- Upon resuming at 3:54 p.m.