

**Canadian Nuclear
Safety Commission**

**Commission canadienne de
sûreté nucléaire**

Public meeting

Réunion publique

February 20th, 2013

Le 20 février 2013

Public Hearing Room
14th floor
280 Slater Street
Ottawa, Ontario

Salle d'audiences publiques
14^e étage
280, rue Slater
Ottawa (Ontario)

Commission Members present

Commissaires présents

Dr. Michael Binder
Dr. Moyra McDill
Mr. Dan Tolgyesi
Ms. Rumina Velshi
Dr. Ronald Barriault
Mr. André Harvey

M. Michael Binder
Mme Moyra McDill
M. Dan Tolgyesi
Mme Rumina Velshi
M. Ronald Barriault
M. André Harvey

Secretary:

Secrétaire:

Mr. Marc Leblanc

M. Marc Leblanc

Senior General Counsel:

Avocat général principal :

Mr. Jacques Lavoie

M. Jacques Lavoie

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Ottawa, Ontario

--- Upon resuming at 2:36 p.m./

L'audience est reprise à 14h36.

1. Opening Remarks

MR. LEBLANC: Bon après-midi, Mesdames et Messieurs. Bienvenue à la réunion publique de la CCSN.

We have simultaneous translation. Please keep the pace of speech relatively slow so that the translators have a chance to keep up.

Des appareils de traduction sont disponibles à la réception. La version française est au poste 2 and the English version is on channel 1.

We ask that you identify yourself before speaking so that the transcripts are as complete as possible.

Same transcript will be available on the CNSC website in about seven to ten days.

I'd also like to note that this proceeding is being video webcasted live and that archives will be available on our website for a three-month period.

Please silence your cell phones and other electronic devices.

We will also ask the ACR representatives to come to the front desk when they are available and I also want to apologize for the delay in starting the Commission meeting.

Monsieur Binder, président et premier dirigeant de la CCSN va présider la réunion publique d'aujourd'hui.

President Binder.

THE CHAIRMAN: Thank you, Mark, and good afternoon and welcome to the meeting of the Canadian Nuclear Safety Commission.

Mon nom est Michael Binder. Je suis le président de la Commission canadienne de sûreté nucléaire.

Je vous souhaite la bienvenue and welcome to all of you joining us via webcast.

I would like to begin by introducing the members of the Commission that are with us here today. My right is Dr. Moyra McDill and M. Dan Tolgyesi. My left Miss Romina Velshi, Dr. Ronald Barriault and Monsieur André Harvey.

We've heard from our Secretary, Mr. Marc Leblanc. We also heard M. Jacques Lavoie, Senior General Counsel to the Commission with us here today. Marc?

MARC LEBLANC: I'd also like to apologize a second time because I've ask AECL to come to the front and

I forgot we had a little piece of business before we go to your matter. So I apologize for this, Mr. Walker.

So the Nuclear Safety and Control Act authorizes (sic) the Commission to hold meetings for the conduct of its affairs. Please refer to the agenda dated February 14th for the complete list of items to be presented today and tomorrow. In addition to the written documents reviewed by the Commission for today's meeting, CNSC staff will have an opportunity to make presentations as will AECL a bit later today and Commission members will be afforded an opportunity to ask questions on the items before us. Mr. President.

2. 13-M11.A

Adoption of Agenda

THE CHAIRMAN: Ok, I'd like to now call for the adoption of the agenda by the Commission Members as outlined in CMD 13 and 11.A. We have concurrence. For the record, the agenda is adopted.

3. 13-M12

Approval of Minutes of

Commission meeting held

January 16 and 17, 2013

THE CHAIRMAN: I'd like now to call for the approval of the minutes of the Commission meeting held on January 16 and 17, 2013 as outlined in CMD 13 and 12. Any comments, additions, deletions? Okay, I notice there is no change proposed, therefore I would ask Commission Members to approve it. So, for the record the minutes are approved.

MARC LEBLANC: If I may Mr. President, with your indulgence and that of the Members, there may be a few little changes we need to be made that are cosmetic that we learned about late yesterday or early this morning. So with your approval, if you can approve it and allow us to do those changes as appropriate.

4. Status Report

4.1 13-M13

Status Report on Power

Reactors

THE CHAIRMAN: As long as you know what cosmetic means. Sure, we'll rely on you, Marc.

We'll now proceed to the status report which is under CMD 13-M13 and Mr. Rzentkowski, the floor is yours.

MR. RZENTKOWSKI: Thank you very much Mr. President. I have no updates of the status report; however, I would like to correct one date. An event which happened at the Darlington site was reported on February 5th; in fact this event took place on February 2nd. So this is one correction and I have also a minor notification. I would like to notify the Commission that a Conservation Council of New Brunswick Action held a press conference this morning in St. John to describe the results of their own assessment of the seismic analysis for the Point Lepreau site. I don't know exactly what was discussed, as what was the outcome of this conference but, nevertheless, I believe this is of interest to the Commission.

THE CHAIRMAN: We'll -- what are we gonna do with this piece of information if we haven't seen it either. I assume somebody would have questions as we get into it. Dr. Barriault.

MEMBER BARRIAULT: Just briefly, when are we supposed to have the final report on the seismic testing in Point Lepreau? Seems to me it's quite a ways down the road --

MR. RZENTKOWSKI: Yes, the preliminary results of the study were reported to us by the end of December and this report -- this preliminary report is

under review. We also involved NRCan to look at some aspect of the seismicity of the site, which are very important to define input parameters to our own analysis. The work by NRCan will be done approximately by the end of March and then, probably, our staff will need another month or two to finish our own assessment.

The final results will be provided by New Brunswick Power if I good remember, by the end of 2014. So it will be another two years to complete the study.

MEMBER BARRIAULT: So this report comes from where, or is it really a report or is it just --

MR. RZENTKOWSKI: It is really a report. It was subcontracted to the third party. I understand this is a consulting company down in the United States and they look at both aspects; that means seismicity of the site and then the seismic analysis of the reactor.

MEMBER BARRIAULT: So do we have a copy of this?

MR. RZENTKOWSKI: The copy of the preliminary report or the copy --

MEMBER BARRIAULT: No, this report was released this morning that we don't have.

MR. RZENTKOWSKI: No, what was released this morning was a note of a press conference so I am not aware how the study was conducted by the Conservation

Council of New Brunswick, but nevertheless I wanted the Commission to be aware of the fact that the press conference was held this morning which questioned a licensing basis of the site from the stand point of improper assessment done with respect to seismicity.

MEMBER BARRIAULT: Thank you.

THE CHAIRMAN: Mr. Jammal, do you want to add something.

MR. JAMMAL: Thank you Mr. President.
Ramzi Jammal for the record.

I think we're just dancing about the issue. I would like to get to the point around CCNB has been discrediting the safety that pertains to the site itself. The site was licensed by the Commission based on its safety, it still is safe and the proposed or opinions that's being presented by individuals is founded on interpretation. But, for the record, what the Commission approved as a safety case, still valid. The site and the reactor is safe and will continue to be safe.

MEMBER BARRIAULT: Thank you. Thank you Mr. Chairman.

THE CHAIRMAN: Ok, I guess another time to get into the details, but hopefully when they find out -- by the way why is it taking so long to -- why is another two years to do this? What needs to be done further and

hopefully by the time the fall report comes in it'll be -- let me hope -- easy to understand and clear about its conclusion?

MR. RZENTKOWSKI: I can probably promise clear conclusion, but I cannot promise it will be easy to understand; there are two different issues -- and why it take so long time? It's an independent assessment so the consultant has to start really from scratch. What I mean by that is they have to look at the specifics of the seismicity of the site. Previously, what was considered by New Brunswick Power was only the average seismicity for the region so this assessment will be significantly more detailed and then knowing the seismicity of the site, one has to conduct the PSA studies, probabilistic safety assessment studies, supported by some structural assessment due to the ground motion. So it is definitely not a trivial assessment, 2 and a half years seem to be a very long time, but I believe that's what needed.

THE CHAIRMAN: OK. Thank you. Colleagues, I think we are now open to questions. Mr. Harvey? Pas de question? Dr. Barriault? Ms. Velshi?

MEMBER VELSHI: Not --

THE CHAIRMAN: Monsieur Tolgyesi? I'm surprised. Dr. McDill?

Ok, well, I've got some questions here. On

Bruce Power, unit one annulus gas, my question is always the same question ... I'm really boring ... are there any safety concerns.

MR. RZENTKOWSKI: I would like Mr. Bob Lojk, Regulatory Program Director for the Bruce Site to respond to this question.

MR. LJOK: For the record, Bob Ljok, Bruce Regulatory Program Division.

No, Mr. President, our technical staff have done a full review of the submission by Bruce Power Energy, present arrangement, and have deemed it to be safe for to continue operation and the current conditions for the -- to let the release to the end of May. Just would like to point out that the affected channels are few, the tubes and cells are brand new so they are now likely to fail, very unlikely to fail and furthermore, there is also adequate defense in depth and notification of any leakage through other means.

Consequently, all the safety points are looked after. This would not be the case if this would be an old reactor, but it's brand new tubes and brand new installations, it's been pressure tested.

THE CHAIRMAN: Okay. Thank you. My next question is -- and again I know that we introduced a new process for reporting events, but I'm still not clear

about when root cause finalizes, you know, will be done.

So, for example, on Bruce B, the total loss of class 4, is that nil report, also you're satisfied and you're now suggesting this is closed, there is no root cause report to be filed again?

MR. LOJK: Bob Lojk, for the record.

At the initial report of the event, we -- we had some concerns, staff had some concerns. There was a problem with the transfer of information, which now is being -- is being worked on. Consequently, we -- the nature of the event, the scope of the event, and the significance of the event, two weeks ago, appear to be a lot greater than it -- than it turned out to be.

Being a prudent regulator, we set a team out there to investigate immediately, just to develop that scope.

And after we analyzed the information and arrived, the report -- the preliminary report from our own staff, and the reports produced by the licensee, we determined that the systems that were in place -- yes, there were certain anomalies that we will follow through normal licensing channels, but this was not an event that merits -- that merits any great concern at any point from now on. It's just -- it's an indicator of perhaps that we should pay more attention to certain programs, but there

were no safety implications whatsoever.

THE CHAIRMAN: So maybe it should be more explicit that this is the final report in here.

MR. LOJK: Yes, we put a note at the bottom that, "This report completes CNSC staff notifications to the Commission on this event."

THE CHAIRMAN: Right. So I didn't know "staff notification" was the same thing as "final report."

Okay.

Because it's the same thing as the next one, on Darlington; you have February the 5th, there was a "fan bearing resulting in smoke?" So this report complete, staff notification, is it a final report? Is there going to be a root cause?

MR. RENTZKOWSKI: No, there will be no follow-up to that. And so I would like to comment on this question, on the process.

Every single time when we believe we should follow-up with the root cause analysis report, and file further information to the Commission, this will be very clearly indicated in the description of the report, right here.

So that's exactly what happened a month ago, when we, for the first time, implemented this process. For two of the events, we indicated when we will

provide the root cause analysis assessment to the Commission.

THE CHAIRMAN: Okay, thank you.

La dernière question c'est pour Gentilly-2. Le déchargement va finir quand?

M. RZENTKOWSKI: Monsieur Benoît Poulet va répondre à cette question.

Benoît?

M. POULET: Benoît Poulet, pour l'enregistrement.

Présentement au rythme que Hydro-Québec procède avec le déchargement, on s'attendrait vers la fin mai, début juin. C'est la date prévue dépendant des arrêts pour entretien.

LE PRÉSIDENT: Alors nous sommes tout à fait d'accord que le processus dont on souhaite est garanti?

M. POULET: Oui. Le personnel est satisfait que les manœuvres sont -- ce sont des manœuvres qui sont -- qui étaient prévues, le déchargement du combustible était une activité prévue pour la réfection donc ils étaient très près pour -- très bien préparés à procéder avec le déchargement du combustible. Donc, rien à signaler, aucun souci du point de vue sûreté nucléaire présentement.

LE PRÉSIDENT: Monsieur Harvey?

MEMBRE HARVEY: Qu'est-ce qui -- une fois que le déchargement va être complété, quels sont les obligations d'Hydro-Québec envers la Commission?

Est-ce qu'il y a d'autres rapports à être produit? Est-ce que c'est un peu la fin de la surveillance directe de la Commission sur Gentilly?

M. POULET: La réponse c'est non. Ils ont toujours un permis d'exploitation et vont soumettre bientôt un plan final d'exploitation qui va inclure plusieurs manœuvres de vidanges et systèmes du traitement chimique des systèmes, les déchets ou les résines usées, il y a plusieurs activités de manœuvres qui devront être faites et puis ça sera sous la surveillance directe de la CCSN, du personnel de la CCSN.

Et je crois que présentement Hydro-Québec pense venir adresser la Commission pour donner une mise à jour sur le progrès de la situation. Je crois qu'ils ont réservé un temps avec la Commission ici au mois de mai ou juin pour venir vous donner un sommaire d'où ils en sont.

MEMBRE HARVEY: Qu'est-ce qui advient avec l'eau lourde? Ils vont vidanger les systèmes puis ça va où?

M. POULET: Présentement il y a plusieurs options qui sont considérées, incluant le remisage dans

des réservoirs qui seraient construits sur le site. Il y a, pour l'état de stockage sûr, il y a même une option qui est considérée pour garder le modérateur dans la callante, qui est un endroit en dedans de l'enceinte étanche qui est plus sécuritaire. Donc ils sont après étudier la question pour trouver la meilleure solution.

MEMBRE HARVEY: Merci.

THE CHAIRMAN: Okay, thank you.

Are there any other events that you would like to inform us? I see somebody standing up? The answer is yes.

MR. ELDER: Peter Elder, for the record, Director General, Director of Nuclear Cycle and Facilities Regulation.

There was notification that was put out through public notification by Cameco about the event at their Cameco fuel manufacturing, about calculation errors to doses to workers. So I know the Commission has been given the copy of their news release.

At this stage, CNSC staff are still analyzing the information we have from Cameco, and we have asked for some further information from Cameco about the vent.

Currently, what we know is that the changes in the doses reported are in the millisievert range, so

not a -- you know, we're still well -- all the doses, even the maximum doses for one year, are all well below 10 -- sorry -- remain well below 10 millisieverts.

Because it's a relatively -- overall, its a relatively small dose, but some of the errors individually could be viewed as significant, so we are looking at -- very closely at not only the error that was in the Cameco's process, but also looking at how we do regulatory oversight of these type of calculations.

When they're done -- you know, when a licensee takes a piece of raw data, and then does calculations to it, so we're looking at how we will be doing oversight of those type of events in the future as well.

So we will get back to you at a future meeting with more details on this event.

THE CHAIRMAN: Any -- you know, any idea on time, when?

MR. ELDER: Well, we are in the stages right now of asking more information from Cameco, so it really depends on when Cameco delivers that information, so I don't want to promise a date right now, but we'll get back with a date through the secretariat.

THE CHAIRMAN: Okay.

Dr. Barriault?

MEMBER BARRIAULT: I'm sorry, do we know if this was a calculation problem or if it was more extensive than that?

MR. ELDER: It's a -- sorry, Peter Elder, for the record.

We know that it is a calculation problem.

MEMBER BARRIAULT: Do they apply the same formula to all the Cameco operations?

MR. ELDER: No, they don't. Cameco field services was bought by Cameco about a half a dozen years ago, and Cameco has been, I guess, progressively pulling that facility into their normal Cameco processes, and as part of the normal Cameco oversight, they discovered this error, and then they reported it.

MEMBER BARRIAULT: Has this increased the dosage above the limits?

MR. ELDER: No, it has not. Again, as Cameco -- there are no dose limits about their limits. There was a couple of places where they had gone over their action levels, and we're not aware of this one.

The actions level for that facility is .8 millisieverts per quarter, so the action level is quite small.

MEMBER BARRIAULT: Thank you.

Thank you, Mr. Chairman.

THE CHAIRMAN: Ms. Velshi?

MEMBER VELSHI: Not to pre-empt what the investigation is going to show, but I think the press release said that there were seven cases where the action level had been exceeded. Looking at it retrospectively, which shows that regardless of the calculation that there was perhaps some other controls that probably didn't work well.

So do they retrospectively do investigation on, you know, how those high doses could have -- relatively high, have happened, and what controls didn't work? Or is the focus just very much on the calculation?

MR. ELDER: Peter Elder, for the record.

They are looking at respectively what happened in those cases where there were exceedences, so if there -- one worker that got considerably more dose than they were expecting, they are looking very closely at what happened in terms of that particular worker but also the other incidences of the action level of incidences.

THE CHAIRMAN: I assume they'd like to reconstruct their personnel records if those are submitted to the Register; is that correct?

MR. ELDER: That's correct and they are done that and one of the first thing they've done is they informed all the employees that there would be changes to

their records and what were the impacts of those changes.

And that why we were looking very carefully and make sure that if they were changing those numbers that they have changed them correctly so that they don't potentially have to be changed again in the future.

THE CHAIRMAN: Ok.

MEMBER VELSHI: So this very much shakes the employee's confidence in the dissymmetry program. Any sense on, you know, the employees feel about it and their level of concern with this?

MR. ELDER: We don't have anything -- Peter Elder, for the record.

We don't have anything directly right now so we've been looking at. But this is a unionized facility and when we do go into inspections, we also do talk to the unions.

So we will be looking at that aspect as well. But they have done a lot -- Cameco was very proactive in making sure that they were explaining to the workers the impacts of the changes so far.

THE CHAIRMAN: Okay. Looking forward to the report itself. Thank you.

Anything else?

Any other item?

Okay. Thank you.

5. Information Items

**5.1 Atomic Energy Canada Limited:
Report on the Performance
Of Chalk River Laboratories**

THE CHAIRMAN: I'd like to move now to the next item on the agenda which is a report on the performance of the Atomic Energy of Canada Limited for the Chalk River laboratory as outlined in CMD 13-M14.

I'll turn to staff to set-up for this presentation and I understand that Mr. Elder you'll make the presentation?

MR. ELDER: That is correct. So I'll just get the rest of the team up here.

THE CHAIRMAN: I'd like to remind everybody that matters that are security sensitive or for confidential nature are normally get discussed in-camera. So when we do ask sometimes questions along that line, you can push back and we'll decide to go in-camera on some of those issues.

Anytime you guys are ready.

13-M14

Oral presentation by

CNSC staff

MR. ELDER: Thank you. Good afternoon Mr. President, Members of the Commission. My name is Peter Elder, I'm the Director General of the Directorate of Nuclear Cycle and Facilities Regulations. With me at the front table today are Mr. Christian Carrier, the Director of the Nuclear Laboratories and Research Reactor Division and Ms. Kim Campbell, the lead author of this report. Also we have with us additional members of the team who are involved in putting together the report and the oversight of the Chalk River Laboratories.

Before starting the presentation, I'd just like to note that while the Government of Canada has indicated plans to continue with AECL restructuring that began with the establishment of Candu Energy a couple of years ago, the government has not yet announced any details of the further restructuring but maybe AECL will have some more to say on that.

First, I'd like to highlight that this is the first time that CNSC staff have produced reports on -- performance report on AECL Chalk River Laboratories and this is following the request from the Commission at the following licence renewal in October 2011.

We decided, in terms of the timing, that to provide the most update information on key issues that the

review period is sort of split into two, most of the material is for the calendar year 2011 and some of the material is only available on calendar year basis but where there are actual issues, they are based on our inspections or on progress reports, the information is updated in the CMD up to the end of October of 2012.

So, all 14 safety control areas have been accessed, however, in the reports, we only highlight safety and control areas where there have been significant developments during the review periods.

That said, we also go into some areas where we can provide for future trending which are radiation protection and environmental protection, occupational health and safety and we've also included for this one security, given that AECL is the only high security site that's not a NPP.

So the report also highlights projects initiatives and major events in the area -- and areas that we've had increased regulatory oversight during the last couple of years. Obviously this includes AECL's progress on the integrated implementation plan for the NRU reactor and associated Voyager 2 program looking at safety culture improvements as well as the lessons learned from the Fukushima accident and how those apply to the Chalk River Site.

In the future, for these performance reports, CNSC staff plan to cover all of AECL's sites and projects. So include things like the White shell Laboratories and the Port Hope area initiatives so that the Commission will be getting routine information on those facilities as well. But for now, the current report only deals with Chalk River.

Just a little bit of context. Chalk River obviously is located, as the Commission may be well aware, is located 160 kms northwest of Ottawa, is one of the most complex nuclear sites in Canada and employs approximately 3,000 employees. Chalk River has been operating for more than 60 years and performs a number of activities including isotope production, nuclear research and development and provides a number of nuclear services to the Canadian industry as well.

So in that context all four, all key phases of nuclear facility life cycle are taking place at Chalk River. There are facilities being constructed, many ones in operation as well as active decommissioning and site remediation going on as well.

Just a reminder that the AECL operating licence was renewed by the Commission in October of 2011; at that time a licence condition was introduced requiring AECL to progress, to complete the improvement identified

in the NRU reactor integrated safety review and also to present to the Commission reports annually on the progress of that one. So the progress of these improvements will be discussed later on in the presentation.

In terms of CNSC oversight, the CNSC has dedicated site inspectors based at the Chalk River site. These inspectors execute our baseline compliance inspection program and have performed 39 inspections between -- in the last -- between November 1st of 2011 and October 31st of 2012.

The results of these inspections are one of the inputs into our overall assessment of AECL's performance. Beside these site inspectors, the CNSC staff also has -- CNSC also has staff located in Ottawa who perform licensing and compliance activities. One of the things we do is, on the key aspects, is we hold a regular progress meetings with AECL to discuss performance on key improvement areas that are listed on the slide.

It should also be noted that we, staff have been focusing the regulatory oversight on implementation improvements to the NRU reactor during the last year and this includes inspections during outages as well.

For the remainder of the presentation, we'll be -- I'll hand it over to Mr. Carrier.

MR. CARRIER: Good afternoon Mr. President.

For the record my name is Christian Carrier.

As Mr. Elder has already mentioned, CNSC staff have assessed all 14 safety and control areas that are presented on this slide. As you can see from the table, AECL has achieved satisfactory rating in all but two areas, namely, management systems and fitness for service.

For the rest of this presentation, CNSC staff will not present details for all 14 safety and control areas. Information will be provided on the safety areas that have performance data to share or areas that have been previously identified as needing improvements.

To clarify, if a safety control area is not directly mentioned in the performance or the performance of this data is not provided, it is considered being acceptable with no significant development during the review period.

I will now shift the focus of the presentation to the areas needing improvements. With respect to the management system, AECL has taken positive steps towards addressing the identified weaknesses contributing to the below expectations rating.

At licence renewal, CNSC staff indicated that AECL was moving to an integrated management system for their Chalk River laboratories meeting the requirement

of the CSA standard N-286, version 2005.

As required by the Licensing and Compliance Handbook, AECL submitted the detailed Phase Project Execution Plan by identifying the actions and timelines to meet the requirements.

CNSC staff believes that AECL is on track to meeting the first phase of deliverables that are due in June 2013.

Also driving improvements in this area, AECL has revised several processes and strengthened its internal assessment processes.

Since October 2011, CNSC staff performed two focused inspections in this safety area. The first one was on the Corrective Action Program and the second on the NRU outage management. Deficiencies were noted in both of these areas. However, AECL has developed corrective actions to address the findings as noted on the slide.

CNSC staff conclude that performance is improving in the safety area. This trend will be monitored during future inspections.

Fitness for service is the other safety area rated below expectations during the review period. To improve performance in the safety area, AECL is developing an Equipment Reliability Program and is

implementing a Periodic Inspection Program for the NRU reactor.

At the time of licence renewal, a licence condition was introduced requiring AECL to implement extended outages for the NRU reactor. The purpose for these outages was to perform maintenance, inspection, repair and replacement activities. AECL has been executing monthly maintenance outages and has completed one annual extended outage since the last licence renewal.

Outages allow improvements to be implemented within the NRU reactor. During these outages, AECL has completed all the required inspections of the NRU vessel. No immediate problems were identified. AECL will continue to monitor the vessel repair sites during future outages.

AECL's programmatic improvements are in progress and should result in future improvements over time. However, deterioration of systems, structures and components due to physical aging has still been observed during the review period.

In all instances, AECL has taken appropriate actions to mitigate the deficiencies and to ensure no significant negative health effects on health safety or the environment.

Effective implementation of the activities

from the Integrated Implementation Plan or IIP will lead to increase equipment reliability in the NRU reactor. They are also expected to improve maintenance processes for the other nuclear facilities on the Chalk River laboratory site.

I will now provide detailed information on four safety areas, namely, radiation protection, environmental protection, conventional health and safety and security.

I will start with radiation protection. AECL has continued to maintain and implement a comprehensive site-wide radiation protection program. This program is based on the ALARA principle to ensure radiation doses are kept as low as reasonably achievable.

During the review period, no worker at the Chalk River laboratories site received a dose that exceeded the regulatory limits. CNSC staff continue to assess the safety area as satisfactory. The dose data presented in this figure is taken from many AECL's Annual Safety Reports for the year 2007 to -- throughout 2011.

The average effective dose to workers at the Chalk River laboratories during the review period is low. It was approximately 0.6 mSv per year or 1.2 percent of the annual regulatory dose limit of 50 mSv. The maximum annual individual whole body dose for a nuclear

energy worker at the Chalk River laboratories site was 9mSv in the year 2011.

The majority of the doses received by workers came from operational activities within the NRU reactor and the production of Molybdenum-99. The dose to the public from the Chalk River laboratories site is calculated by using environmental monitoring results. Airborne and liquid exposures pathways such as inhalation or an ingestion are also taken into account when determining the public dose.

The table displayed on the slide compares public doses for the years from 2007 until 2011. As you can see, doses to the public continue to be well below the regulatory annual public dose limit of one mSv.

For the safety area environmental protection, AECL continues to implement and maintain an adequate Environmental Protection Program. This program controls and monitors releases of radioactive and hazardous substances and their effects on the environment. In 2011, there were no airborne or liquid exceedances in effluent releases.

During this review period, AECL has implemented a number of initiatives to improve the Environmental Protection Program. From its review, CNSC staff assessed the safety area as satisfactory.

Radiological emissions, both airborne and liquid, are monitored at the Chalk River laboratories site. The main airborne radiological release is Argon-41 which results from the NRU operation. Argon-41 is the main contributor to the public dose from the site. It should be noted, though, that the doses received by the public as a result of the Chalk River laboratories operation remain low as indicated on a previous slide.

Liquid radiological emissions are also effectively controlled. In 2011, the annual average tritium concentration in drinking water at the town of Petawawa and the City of Pembroke was 3.6 becquerels per litre. This is well below all national and international limits for tritium in drinking water.

The next safety area to be discussed is conventional health and safety. AECL continues to develop and maintain a comprehensive conventional Health and Safety Program for their Chalk River laboratories site.

During the review period, AECL has improved aspects of the program based on best industry practices and results from accident investigations and internal audits.

Improvements are noted in the following areas: the work permit system and the management of contractors.

The number of lost time incidents remain very low demonstrating a satisfactory ability of AECL to keep their workers safe from occupational injuries. CNSC staff continue to assess the safety areas as satisfactory.

Similar to nuclear power plants in Canada, the Chalk River laboratories is designated as a high security site holding various categories of nuclear material in different states. As such, CNSC staff are including an overview of the safety area security.

During the review period, AECL met regulatory requirements, has enhanced its in-house training program and has worked diligently to improve its overall security program. A satisfactory rating has been given to the safety area.

The focus of the presentation will now shift to regulatory issues. These areas include: improvement to the NRU reactor, the fire hazard assessment recommendation in the NRU reactor, the lessons learned from Fukushima, and finally, the Nuclear Legacy Liabilities Project.

To support the last license renewal, AECL was required to perform an Integrated Safety Review or ISR for the NRU reactor. The ISR was an all-inclusive evaluation of the NRU reactor design conditions and operations based on modern codes and standards.

The scope of the ISR considers continued operation of the NRU reactor until the year 2021. The ISR identified numerous areas for improvements to make the NRU reactor more safe and more reliable. These were used to develop the Integrated Implementation Plan or the IIP. The IIP drives improvements related to the NRU reactor.

For their current licensing period from 2011 to 2016 with additional actions planned for the period 2016 to 2021. Execution of the IIP is a condition of AECL's operating license. AECL's implementation of the actions on the IIP provide further confidence in the continued safe operation of the NRU reactor until the year 2021. Currently, AECL has more than 900 actions identified in the IIP, which have been organized into improvement activities.

For monitoring purposes, AECL management has selected 45 high priority improvement activities which involve completion of half of the 900 individual actions. To date, AECL reports that several IIP actions have been completed ahead of schedule. The majority remain on schedule and only a few have been delayed within the IIP delivery year. Two high priority actions, namely the conduct of the safety culture survey and the NRU reactor rod bay water swap, while delayed from the initial due dates, have now been completed.

CNSC staff are satisfied that progress to date is acceptable. CNSC staff continue to monitor the progress of the effective implementation of the high priority improvement activities and related actions. As a result of the NRU reactor fire hazard assessment or FHA, a considerable amount of work was identified. This included fire alarm upgrades, physical modification of fire separations, sprinkler and stand pipe upgrades, cabling modifications, and programmatic changes.

At license renewal, CNSC staff reported that the majority or approximately 98 per cent of the recommended fire protection upgrades had been completed. During the review period, CNSC staff conducted an inspection to verify completion of the upgrades. The inspection identified activities that in CNSC staff's opinion did not fully address the initial findings from the FHA. AECL is currently conducting work and evaluation to confirm that the initial recommendations have been fully addressed.

CNSC staff are and will continue to monitor progress of these remaining activities through a review of monthly reports submitted by AECL and through onsite compliance verification activities. It should be noted that even though a few items remain to be completed to address the FHA recommendations, AECL continues to carry

out work as per CSA standard N293 title Fire Protection for CANDU nuclear power plants. Compensatory measures will remain in place until completion of all FHA recommendations to ensure the risk to persons and the environment are being appropriately managed.

The safety area emergency management and fire response is not discussed in detail in the report. However the implementation of the lessons learned from the Fukushima accident will strengthen the safety performance in this area. Subsequent to the Fukushima accident, AECL was requested to review initial lessons learned from the event for the Chalk River laboratory site and to reassess the safety cases for all the facilities on site.

CNSC staff concluded that the underlying defence and depth provision are in place to deal with natural disaster and accident at the Chalk River Laboratory site. In addition to the reassessment of safety cases, AECL has also developed an action plan to address the lessons learned from the Fukushima Daiichi accident which includes short, medium, and long term actions. The action plan has been incorporated in the IIP, which is a condition of the license again. CNSC staff will continue to monitor on the progress, on these actions, to ensure lessons learned from the Fukushima accident are implemented at the Chalk River Laboratory

site.

The Nuclear legacy liabilities program or NLLP was established by the Government of Canada in 2006 to manage Canada's nuclear legacy liabilities at the AECL sites. The liabilities consist of outdated and unused research facilities and buildings, buried and stored legacy waste, and effected lands. AECL and the CNSC have signed a protocol which establishes the framework for the NLLP licensing activities. Under this protocol AECL is required to submit to the CNSC semi-annual progress updates on the projects.

Some of these projects include the fuel packaging and storage facility, the stored liquid waste cementation project, the very low level waste facilities, and various decommissioning projects. As noted on the slide, the contents of the fissile in solution storage tank, otherwise known as the FISST, may be included in the scope of the stored liquid cementation project. Note that this is only one of the options being investigated while the other being repatriation to the United States.

CNSC staff have not received an application for transportation of FISST material. However, it is reviewing an application to certify a transportation flask should this option be selected. CNSC staff have focused oversight on the NLLP project and will continue to monitor

its many initiatives.

CNSC staff's overall assessment presented today is based on information from its compliance activities. These activities include program assessments, review of submissions, and reportable events, and baseline compliance activities. Focus inspections are also carried out in areas where weaknesses have been observed or are based on AECL's own activities such as the IIP high priority improvements activities, the transition of the management system to the N286 version 05 CSA standard, programmatic improvements and maintenance activities for the NRU reactor, and actions related to the lessons learned from Fukushima.

This first annual performance report focuses on the chalk river laboratory site only. However, it is CNSC staff intention to include an update on all AECL site in future performance reports to the Commission. Also, as per the license, AECL is required to submit by June 2014 a plan for the end of the operation or the continued operation of the NRU reactor beyond October 31st, 2016. CNSC staff will provide recommendations to the Commission as appropriate once the plan is submitted.

CNSC staff, finally, would like to touch on AECL's public information program for the Chalk River Laboratory site. AECL's public information program is

intended to provide stakeholders with timely and meaningful information on activities at the site. The public information program includes key elements such as quarterly meetings with stake holders, a community news letter, and a website that provides information on events. The program continues to meet CNSC requirements for public information.

In 2006, AECL established the Environmental Stewardship Counsel for the Chalk River laboratory site. The objective of the Counsel is to build relationship and creating opportunities for open dialogue with community stake holders. The Counsel members include representatives from local stake holder groups such as First Nations and Aboriginal Communities, Municipal Governments, Environmentally Focused Organization, and Land owner or associations. The CNSC attends the environmental Stewardship Counsel meeting as an observer.

The CNSC also conducts public consultation for various projects at the Chalk River Laboratory site. While there are areas where AECL needs to continue to improve, the overall evaluation performed by CNSC staff confirmed that AECL has operated the Chalk River Site safely during the review period. CNSC staff will continue to track progress in these areas and update the Commission in future performance reports. This concludes my

presentation; CNSC staff are now available to answer to any of your question.

THE CHAIRMAN: Thank you. Before we open up the floor for question, I would like to hear from AECL and I understand they have a presentation as outlined in CMD-13 M14.1 and M14.1a. I understand that Dr. Walker will make the presentation; over to you.

13-M14.1 / 13-M14.1A

Oral presentation by

Robert Walker

DR. WALKER: Then I will start. Good afternoon Mr. President and members of the Commission. For the record my name is Robert Walker, I am the president and chief executive operator of Atomic Energy of Canada limited.

Last fall, I was asked by our Minister and had agreed to continue in my role as president for at least another two years; this has been approved. I'm confident in the path that we have chartered for our organization and am proud to continue to have the opportunity to lead. Here with me today are Randy Lesco on my immediate right, AECL's chief nuclear officer and vice president operations, and Brent Wolfram, AECL's

acting senior director of compliance.

Il y a plus d'un an, soit en octobre 2011, nous nous sommes présentés devant la Commission afin de demander le renouvellement du permis d'exploitation des laboratoires de Chalk River d'AECL. Nous sommes ici aujourd'hui afin de faire le point sur nos activités depuis le renouvellement de ce permis.

In this period, we have continued on our commitment to operate safely and in compliance with regulatory requirements. We have made progress on our improvement initiatives consistent with our commitments to our regulators. You may recall that when I was before the Commission at the outset of the relicensing process, I spoke of three key focus areas for success for our laboratories. First, to establish a foundation for the nuclear laboratories in the short term through the relicensing of our Chalk River site; second, to contribute to the Government of Canada's restructuring of AECL; and finally, to proactively position the nuclear laboratories value proposition.

During our last hearing, I also introduced our new strategic outcome; one that articulates AECL's role as Canada's premiere nuclear Science and technology organization. Today, our activities are fully aligned to ensure that Canadians and the world receive energy,

health, environmental, and economic benefits through nuclear science and technology with confidence that nuclear safety and security are assured. Our efforts to advance nuclear science and technology for the benefit of Canada are underpinned by the dedication of our employees to meet the commitments of the license granted to us by the CNSC. My remarks to the commission in October 2011 have not changed. These commitments remain a top priority for AECL. We have captured these commitments through a simple, yet elegant concept to which all AECL employees aspire. It is safety, execution, innovation, excelling together. It's the same bit of a strong professional relationship that we have with the CNSC staff has my full attention. Our employees continue to be committed to a positive working relationship between AECL and CNSC staff, build on transparency and trust.

En tant que membre du principal organisme du Canada voué à la science et à la technologie nucléaire, nous reconnaissons avec respect l'ampleur des responsabilités qui nous incombent dans le cadre du mandat essentiel que nous exécutons au nom des Canadiens et Canadiennes.

Allow me to briefly update the Commission on the restructuring of the AECL nuclear laboratories. The government has declared its intention to restructure

the laboratories following completion of the divestiture of our commercial operations in 2011. Through the current phase of restructuring, the government has signalled that it will be addressing the long term mandate and management model for the laboratories. Safety, security, and environmental requirements will continue the top priority.

At the same time, the government has indicated a willingness to reduce its costs, risks, and liabilities. It intends to ensure a sound commercial relationship between AECL and its customers and stakeholders who share appropriately in the costs and benefits. The government is examining the conditions for the laboratories to succeed in the medium to long term. Now we are expecting that the government will communicate specifics of the restructuring in the near future. Consultations with CNSC staff regarding the implementation will occur. The government is fully cognisant of AECL's commitment to advise the commission in 2014 of its intention regarding the operation of the NRU reactor beyond 2016. It is also cognisant of the timing of and preparations required for seeking the next relicensing of the Chalk River laboratories in 2016. These considerations are being factored into the restructuring implementation plan. Again CNSC staff will be consulted.

I want to ensure the Commission that AECL

is and will remain committed to safe operation through this transition. AECL will continue to sustain efforts to improve its safety record. This commitment to our regulators and the public will not waver.

Thank you to the commission for this opportunity to speak today, at this time I ask Mr. Lesco to continue our update on our current license period activities and I'll be happy to answer any questions of the Commission after Mr. Lesco's remarks.

MR. LESCO: Thank you Dr. Walker. Good afternoon Mr. President and members of the Commission. For the record my name is Randy Lesco and I am AECL's Chief Nuclear Officer and Vice President of Operations.

I will begin my comments today with an update on several areas of regulatory interest to the commission. Afterwards I will talk about improvements related to our safety control areas before my concluding remarks. To start I'd like to focus on key items of interest.

Since the renewal of our operating license in November 2011, AECL has made strong progress in how we manage CNSC actions. Since renewal, AECL has met 371 deliverables. AECL continues to progress on it's integrated implementation plan for IIP. Based on current forecast, AECL will complete 91 percent, or 21 of 23 high

priority year one activities by March this year. One activity has been deferred and rescheduled for completion by the end of this calendar year. A second activity is currently at risk for completion by March 31st. Deferral of these two activities have no impact on operational safety. It should be noted that one year-2 activity has actually been completed this year ahead of schedule. AECL has closed 490 of 872 IIP actions for year one, outstanding actions are being completed and will be verified complete. Any changes to plans will be reviewed and approved through the IIP change control process. IAP improvements to the NRU reactor focus on people, process, and plant. Highlights of IIP so far include the certification of four new senior reactor shift engineers, improvements to the outage management processes, the replacement of instrumentation to enhance reliability of reactor operation and replacement of over 1 million litres of treated and raw water. Further activities are in the way through the IIP that will continue to enhance the ongoing safety and reliability of the NRU. AECL continues to demonstrate NRU's ongoing fitness for service, during 2011 and 2012 AECL completed inspections for the vessel and service inspection program. Inspection results confirm that NRU vessel remains fit for service.

In addition, a systematic plan has been

developed and implemented to improve reliability of any equipment.

Aging management plans for 40 of 46 NRU systems are complete. Additional staffing and resources have been added to improve system health activities and predictive maintenance.

AECL has completed two NRU extended outages; these outages permit extensive inspections, maintenance and repair work. AECL is on schedule to conduct its third extended outage in April 2013.

AECL's Voyager II program was developed to move the organization towards industry standards and improve safety culture. This was done through the introduction of event-free tools and the use of -- and the use of industry best practices for event reporting and management oversight.

Completion of the Voyager II program is on schedule; 84 of 98 actions have been completed, this covers six areas, including equipment reliability, worker fundamentals, problem identification and resolution, operating experience, standards of operation, and management oversight.

Voyager II provides a focus on AECL's commitment to improve leadership and employee performance. This includes establishing clear expectations and

developing a culture of personal accountability.

AECL continues to assess its safety culture through Voyageur II. Quarterly surveys, individual interviews, focus groups and site-wide safety culture assessment were completed. These assessments indicate improvements in the use of operating experience, the corrective action program, precision quality and equipment reliability.

These assessments also indicate the need for continued management oversight in the reinforcement on the standards and expectation.

The findings confirmed the validity of the Voyageur II program were continuous on the completion of the remaining 14 actions; Voyageur II is scheduled for completion in September 2014.

Following the Fukushima event in March 2011, AECL reconfirmed its readiness to respond to emergencies. Emergency response capabilities were checked and safety-related equipment was confirmed to be in a state of readiness.

In response to the CNSC 12.2 request, AECL has developed a comprehensive action plan. This action plan involves the assessment of existing systems, their ability to withstand extreme external events, and the implementation of a safety enhancement as required.

A Chalk River site-wide assessment of buildings and critical safety systems is on track for completion by the end of 2013.

This assessment takes into account the potential impacts of events on multiple nuclear facilities and identifies key response measures.

Finally, AECL accelerated its schedule to implement its severe accident management guidelines for NRU. The new target date for implementation has been brought forward to September 2015.

Over the next few minutes, I would like to talk about AECL's performance in the safety control areas.

AECL is currently engaged in several activities aimed at strengthening our management system. The management system covers -- governs how AECL conducts business. It provides the necessary framework that enables AECL to operate safely, comply with regulatory compliance, and meet customer commitments.

One improvement includes nuclear safety oversight. Changes have been made to improve the oversight of the President and CEO and Board of Directors through regulator reporting from management.

AECL has established a project for continued improvement to incorporate the new CSA management system standard. Forty-three (43) of 89

actions on this project are complete. The remaining 46 actions are progressing as planned.

Fitness-for-service activities at AECL extends beyond NRU. Additional resources and management-focused have been directed to improve the performance of other AECL facilities.

AECL has developed master equipment lists for its future facilities to enhance its preventative maintenance program. AECL has also implemented system health monitoring program to improve predictive and preventive maintenance.

A new radioactive liquids management division was formed. This division is responsible for the safe and reliable operation of Chalk River's radioactive nuclear waste infrastructure. And AECL is developing an asset management framework to further improve the management of our infrastructure.

To address the safety and control area of radiation protection, I would like to begin by reviewing some important data.

The annual regulatory limit for nuclear energy workers is 50 millisieverts per year. Over the past five years, approximately 90 percent of AECL employees received an individual effective dose less than or equal to 1 Millisievert per year. This graph

represents a distribution of the remaining 10 percent of employees.

There has been a steady decrease in the percentage of AECL staff who received an individual effective dose greater than 5 Millisieverts per year.

In 2011, no employee received the individual effective dose greater than 10 Millisieverts. Preliminary data for 2012 indicates that this trend has continued.

In addition to the decline in maximum individual dose to Chalk River staff, the average individual dose has also declined over the past two years. Preliminary data for 2012 also indicates that this trend has continued.

In summary, the data demonstrates that radiation protection at Chalk River has improved. This is attributed to a number of program improvements such as the introduction of new barrier system and signage, the reduction of approximately 50 percent of registered sources and the establishment of a new health physics instrumentation group.

Finally, AECL has hired a third-party to conduct a review of decommissioning RP processes, improvement actions that will lead to program changes reflecting industry best practices.

AECL has experienced 21 lost-time injuries for the year 2012. The extent of lost-time from these injuries represent less than one person-year for a staff complement of 3,000 employees.

The 2012 injuries are predominately due to weather-related slips, trips and falls, for lack of adherence to proper material handling practices.

Overall, the frequency of lost-time injuries at Chalk River is within the range of Canadian nuclear industry experience.

However, AECL's goal is zero lost-time injuries. As Chief Nuclear Officer, my expectation is that we will improve in this area.

We are taking action to meet AECL's goal; this includes improvements to site maintenance, employee awareness, safety procedures, training, and AECL's return-to-work program.

Since licence renewal, joint exercises have been conducted with local responders to practice and improve AECL's emergency response capabilities.

AECL has also signed a Mutual Aid Agreement with Canadian nuclear utilities. In response to the Fukushima lessons learned, this agreement incorporates the provisions of nuclear emergency aid and resources.

AECL issued an updated strategic emergency

management plan to meet public safety Canada requirements. This plan identifies our response to emergencies and how we will support Canada as a federal emergency response.

Among other upgrades, AECL radiation assessment vehicle was tested and commissioned. AECL's alternate offsite emergency operation centre also received improvements.

Lastly, with respect to fire protection, AECL has purchased additional firefighting equipment, implemented mandatory training for all employees and managers, reduced combustible materials onsite, and improved housekeeping.

With respect to security, new fencing and ballistic shelters have been installed in strategic locations inside AECL's protected area; AECL has expanded its in-house training capabilities and purchased an additional light armoured vehicle.

These enhancements have been validated through AECL training drills and force-on-force simulations.

To foster continuous improvement, a third-party review of AECL security was conducted, opportunities to further strengthen AECL's security posture have been identified.

In environmental protection, I would like

to begin with the release of some annual environmental results. AECL implements a number of programs that monitor, assess and mitigate the impact of trucker operations on the environment. This includes a comprehensive monitoring program as part of an ISO 14201 Environmental Matching System.

Total radiological airborne and liquid emissions have declined in recent years. One of the declining airborne emissions in 2009 and 2010 can be attributed to the shutdown and repair of NRU. AECL 2011 data indicates an overall decline in airborne emissions. Based on 2012 preliminary data, results are comparable to 2011.

Similar trending can be seen in liquid emissions. Monitoring results confirm emissions are less than one tenth of one percent of derived releases over the same five-year period. Again, based on preliminary 2012 data, monitoring results are comparable with 2011 results.

Changes at the NRU facility have resulted in significant reductions in emissions from the Chalk River site. Argon-41 emissions from NRU have been reduced by 30 percent and tritium emissions from NRU have resulted -- have been reduced by 75 percent following the NRU vessel repair. The recently completed Rod bay water swap has also reduced tritium releases.

The Chalk River Environmental Protection Program provides monthly updates of key environmental data; the data are made available to the public through AECL's external website.

Before completing my remarks, I would like to provide a few highlights to demonstrate AECL's progress on the Government of Canada's Nuclear Legacy Liabilities Program. Milestones reached include completing the construction of AECL's fuel packaging of storage facilities with equipment installation currently under way.

In December 2011, AECL's pool test reactor was successfully dismantled and decommissioned.

Finally, AECL has started decommissioning its heavy water upgrading plant. Completion of this project is planned for December 2014. CNSC staff are kept up to date on our progress on a regular basis.

Waste management. AECL continues to improve the efficiency and effectiveness of the Waste Management Program at Chalk River. Overall efforts are waste integration and recycling have resulted in a reduction of the volume of solid waste generating by five percent or 268 cubic metres in 2012; of this reduction, 21 cubic meters represent radioactive waste.

AECL plans a further reduction of

radioactive waste volume by 10 percent next year. Various initiatives are planned to accomplish this reduction. This includes the establishment and a control area to waste monitoring acceleration facility. This area permits the enhanced sorting of waste to ensure the appropriate management of likely clean waste, recyclables, very low level of radioactive waste and low level waste.

In closing, Mr. President and Members of the Commission, we have operated at our site during the current licence period with due regard for the safety and environment, the public, and AECL employees.

Progress has remained over the past 15 months. At the same time, we recognize that a number of key areas require ongoing improvement. We will continue to meet our commitments under the licence; we will continue to improve our operations enabling us to fulfill our role as Canada's premiere nuclear science and technology organization.

At this time, my colleagues are available to address Commission Member's questions.

THE CHAIRMAN: Thank you.

I'd like now to open the floor for questioning -- for questions from the Commission Members and I'd like to start with Miss Velshi.

MEMBER VELSHI: Thank you, Mr. President.

I'll start up my question -- first question on conventional health and safety and if we can turn to staff CMD 13-M14, page 28.

In Section 4.2, under the box, I was quite surprised to have the staff say that the loss time incident numbers remain very low at Chalk River. A number of 13 LTIs, was even higher the year after, is hardly low when you compare with other nuclear power plants where zero seems to be the norm and I was very happy to hear AECL say that their goal is zero when it comes to loss time injuries, but I was curious as to why staff would make that statement?

MR. ELDER: Peter Elder, for the record.

I think we're looking at context in terms of not comparing it to nuclear power plants where most of the work is done indoors. What you have to recognize, as AECL pointed out, that large incidents of their loss time injuries are the fact that it's a very wide open site where you work in winter all the time in the varying environments.

So, what we're looking at is -- we'll try to get some figures for the next ones about how it compares to similar types of big research sites, but our preliminary conclusion would be, as compared to the average industry in general, these are still very low

numbers.

They are not low as compared to what the nuclear power plants have been able to achieve. But, again, you have to look at how the site is laid out and there's a lot of people walking back and forth outside all the time.

MEMBER VELSHI: Thank you. And I think, providing that benchmarking information would be helpful, I think even normalizing the data into four million hours or 200 thousands hours would be helpful.

Because, as I look at AECL, CMD, on page 19, you do provide a frequency, but the units aren't provided. So, I wasn't sure whether that was 4 million hours or 200 thousands hours or whatever. So, I think that would be helpful.

The second part of my question, and I guess I'll just ask that to AECL, you did say that most of your injuries -- and the trend is not going in the right direction; it's almost doubled in the last couple of years -- is due to slips and back injuries due to material handling.

And yet, when I look at the improvement initiatives that you have identified on pages 18 and 19 of the CMD, those don't seem to be addressing that hazard or it wasn't obvious to me when it looks at lockout and

working at heights and so on.

So, are there other initiatives besides this that address your lost time injury performance?

MR. LESCO: Randy Lesco, for the record.

When you ask that sort of perspective, for example, strains due to material handling, what we tried to put in place is awareness sessions to making sure that appropriate or proper practices are in place for material handling.

The other aspect with respect to slips, trips and falls is really around making sure that we have proper site maintenance. What I mean by that is that we have, in the winter, we have actually designated walkways that are cleared and salted to making sure that we remove the hazards associated with slips, trips and falls.

Again, it's making sure that our staff are aware of the hazards around them to making sure that we try to be vigilant in terms of reducing injuries.

MEMBER VELSHI: Thank you.

THE CHAIRMAN: I think I'd like the formula used last time: two questions, first round, and see what happens next.

MEMBER VELSHI: Thank you.

Okay, well, yes ---

THE CHAIRMAN: You don't have to ask two.

MEMBER VELSHI: Oh! If I want. Going to my next one.

So, it's in the two areas where performance has been less than satisfactory and, if you look at management systems, as I look at the different issues collectively that have been identified by the staff in their CMD -- and I'll list some of them because I've got them here in front of me -- there were deficiencies in the Corrective Action Program, but corrective actions were reported there once as complete but were not; the Periodic Inspection Program documentation being unacceptable; fire hazard assessment deficiencies not being addressed adequately; failed fixed radiation monitors and their timely return to service, the NRU sealing issues is not being addressed promptly, and so on.

As I look at those, I go: well, so you still got a ways to go in fixing your system and I know you have said that, in your improvement plan, you've still got probably half your actions yet to complete. So, when do you expect to get out beyond expectations and into the satisfactory zone in this area?

MR. LESCO: Randy Lesco, for the record.

Perhaps I can deal with the progress that we are making on our management system first.

First of all, we are strengthening our

management system to making sure that we have the proper framework in place. And we have identified six management areas to which there is leadership with an executive team reporting to the CEO. There are around a program activity planning, integration alignment, HSSC, people management, capability management and improvement management.

That's kind of the framework that we set in place. The second aspect is that are we driving to making sure that we are improving with respect to and being compliant with the new CSA management systems standard: I think I'm satisfied how we're progressing in that matter and I feel confident by the end of this year as we move towards, to address those gaps that we will meet the expectations of the CNC staff.

With respect to fitness or service, I think we are on a journey here. The reason why I am saying that is that we need to make sure that we have the appropriate programs in place to making sure that we are preventing equipment issues. As opposed to being always in a fire-fighting mode. Right, and so when I talk about our aging management programs, when I talk about our system health programs, when I talk about obsolescence programs that we are now putting in place, the expectation is as we move forward that we will continue to improve our equipment issues and reliability. So there's more longer time frame

I would say with respect to seeing improvement in terms of fitness and service recognizing that our site is 60 years old and investments have only been made in number of years in terms of improving our infrastructure going forward, including putting in programmes to ensure that our equipment performance improves.

MR. WALKER: For the record, Bob Walker.

I'd like to just add to this and identify that first and foremost, the management system is my responsibility. It is my accountability to the Board of Directors that we are managing the company to meet our customer commitments within the resources available and meeting our regulatory commitments.

I have established the expectation for my management team that will be operating effectively in our new management system framework through fiscal year 2013 - 14. In that regard, in the matter of health, safety and the environment, Mr. Lesco is my executive champion. It includes addressing the issues that the members identified. Importantly, it also identifies the systematic trends that we're seeing that come into our budgeting process and prioritization to make sure that I in turn can deliver the effective budgets and resources to Mr. Lesco so that we can make the implementation. So we are moving forward in that, in an appropriate way.

Thank you.

THE CHAIRMAN: Thank you. Dr. Barriault?

DR. BARRIAULT: Thank you, Mr. Chairman.

My first question to CNSC, the statistics that you provided are for 2011. I don't see anything for 2012. And yet AECL have the statistics for 2012 so I guess, why?

MR. ELDER: Peter Elder, for the record.

It's -- simple fact is their statistics come from them so they actually get them, they always get them before we do. And report like this takes a number of months to put together, so we had to at some point put in a cut off on when we were going to put in data, because we don't want to put in data just for the sake of putting in data. We also want to make sure that we reviewed it, we agree with it. So we made a decision that we would go until the end of October, last year. AECL has the advantage of having the data that's, you know, on something like loss time injuries where it's relatively quick to collect, you notice, on some of the other ones, like RP, they're not even giving you final answers yet. Those numbers aren't due to us for another two months.

DR. BARRIAULT: So it begs to question really, have they changed from below expectations of satisfactory in 2012 and we don't know about it?

MR. ELDER: No. It is that -- and that's why I said at the beginning it's very important to say we have divided this up, you know, we tried to, the ones where we have the data, where we have information -- in fact if we have management system, when we have this, you know, we know they are on their way, we would, we do, concur that they're making significant visible progress on there, but they're just not there yet. We talked a lot about are, you know, are we being fair and felt are they really for 2012 satisfactory? We came to that conclusion, we would have told you. And we were looking at say, the key deliverables are actually in 2013.

DR. BARRIAULT: Okay.

MR. ELDER: And so on that one. So we are not, you know, we're -- but we are balancing in some of the key information that comes in on an annual basis like the detailed environmental data, the detailed radiation protection data comes in April time frame.

DR. BARRIAULT: Second question.

THE CHAIRMAN: But on that question, so when would be a good time? Because you are the one that decide when to come to report to us on performance, maybe you could have waited another month and include 2012. I mean, when is -- when would be a good time to have the most recent data so you know how to upstep with the

proponent.

MR. ELDER: Peter Elder, for the record.

We are looking at this and discussing. We were, and one of the things that we've been looking at was when we start to put together this report, we realize that we were getting reports at different times for different projects. So we have been working with AECL trying to line those up and once we come to agreed date of where they are going to line up to, some were October, some were April. If we all -- set them all to April then sometime in the fall makes a good time to come back with the comprehensive view of everything.

Again, you know, we want to make sure that we're just not repeating data that we get from AECL, that we have time to actually assess it before we present it to you as well.

So we are looking actively and working with AECL to try and line up all these information about not only the normal, not just normal, but the radiation protection, the environmental data, but also the reports on some improvement initiatives which have a reporting cycle. And we are looking at trying to all line those up to a common time so that we can present it all in one way. So the answer is we're looking at it, but I don't actually have the ultimate date yet. And because the timing with

the secretariat, you know, we -- this report could have been as early as December this year and just other events about the hearings in Darlington sort of pushed things a bit so, you know, we're looking at saying hopefully we're coming back in with a complete piece of data, look at data. We're also going to look at seeing of timing of other announcements around these, you know. I don't think you'd necessarily want us coming this time ---

MR. CHAIR: No, but I'm looking for the next annual report.

MR. ELDER: --- right.

MR. CHAIR: Two thousand fourteen (2014). Find a time that you're not ---

MR. ELDER: Absolutely.

MR. CHAIR: ---

MR. ELDER: Absolutely. And we're trying to get that synced. I just don't have the answer yet but we are seriously looking at it.

THE CHAIR: Dr. Barriault.

DR. BARRIAULT: Thank you. Second question really to the AECL. You're looking at the Voyageur 2 programs continuous improvement, I am assuming. If you were to start over again, would you still follow that same program or would you find something better, faster, or whatever?

MR. LESCO: Randy Lesco, for the record.

I believe that if we were to start again, we would have a same type of improvement plan going forward.

DR. BARRIAULT: Okay, thank you. CNSC, are you satisfied with the progress of the Voyageur 2 program?

MR. ELDER: Peter Elder, for the record.

I'd say yes, we are actually quite satisfied. We feel that what they're doing does reflect good practice that we've seen elsewhere in the industry. And if some of the Commission remembers, remember back a while ago, I think staff were very sceptical at the beginning of this project, not about what they were going to do, but on the ability to deliver. And we actually think they have done a very good job on delivering this time.

And it's also the time frame is consistent with how long it takes to make some of these changes, especially around safety culture, is that you cannot change it over night. And so that's -- we put a lot of stress, a lot of importance on continuing to measure progress. And AECL has done a very good job of that to make sure that they continue to do surveys to confirm that they are on the right path.

DR. BARRIAULT: Thank you. Thank you, Mr.

Chairman for now.

THE CHAIRMAN: Thank you. Mr. Harvey.

MR. HARVEY: Merci, Monsieur le Président.

In page 2 of the staff CMD can read that the deterioration of structure system and competence due to physical aging continue to be observed most notably in the NRU reactor.

In all instance, AECL took appropriate action. Staff consider that there are apparently no significantly active effect on the health safety or the environment from these deficiencies.

But right after the CNSC staff expects that over time these activities will lead to increased equipment reliability in the NRU reactor and will also improve maintenance -- it's vague.

I mean will the action taken by AECL will solve the problems or not? You expect that over time, it will solve the problem. So is difficult to ponderate the importance of the problem, the importance of the actions taken and the final result that would result of that.

MR. ELDER: Peter Elder, for the record.

I think my response was very similar to what Mr. Lesco said. This is getting out of a fire fighting mode into being able to predict and do the maintenance and it's a -- they are doing the right things in terms of the saying; there isn't some magical solution

that suddenly going to deal with all the infrastructure or the problem on the 60-year old site.

So they are putting the programs in place that should be able to help you manage that. And it's always going to be a should until you actually deliver these programs. It's not a, you know, a new piece of equipment. It's a program to help you manage an aging piece of equipment,

And so you can clearly say an aging manage program is going to help. Will it help on everything from what we're seeing where you have issues with the fire water supply system just because the infrastructure is old? You may know earlier that it's old; it doesn't have to break and then you deal with the break to figure out it's old but it won't necessarily -- it will not get you a new system.

And -- so I don't -- you can't say with absolute certainty on the aging management that you're going to solve all their problems with the program. What you can say is you're better off with a good proactive program and to continue what they've been able to do is that when they get in this situation they have been very successful and very appropriately inputting into the necessary compensary actions to make sure there isn't any irritation.

So part of your fire water system breaks, you can isolate it and work around it. That would be an example to say. So it is non-definite yes. And this is a much bigger issue given the general, the age of the site and the infrastructure issues that are there.

MEMBER HARVEY: My concern is that some of those actions that has to be taken might be very important compared to some others. Some equipment are more environmentally sensitive and take NRU for example, I mean this is very specific equipment which has to be looked at very severely.

MR. ELDER: Peter Elder, for the record.

And that's why we really made them go through the process of the integrated safety review. It's not only does it make you look at everything, it then takes your actions and makes you prioritize those actions, identify your major weaknesses and then deal with the major weaknesses first, from a safety prospective.

So, there is a prioritization. That prioritizing tool remains there so that they can, if new issues come up, they can actually put it through their prioritization tool and make sure it gets the appropriate action and in timely basis.

MEMBER HARVEY: That context makes my second question about the vessel itself. If the vessel

condition monitoring assessment concludes that there has been no evidence of propagation, etc. etc., the staff note that there is evidence of minor corrosion associated with the vessel while penetration under -- once again -- and at the end which leaves open the question of the vessel leak thickness during the current evaluation period, consequently its operational reliability -- it's a -- if there is evidence of some corrosion and you mention it, it leaves open a question so how to be secure about that -- say okay, it's ---

MR. ELDER: So, Peter Elder.

I'll give you the high level answer and if you want details, we can get our specialist to give you more. But what we're saying is if you go back to the vessel problems related to corrosion inside the vessel, AECL took a number of efforts, after repair, to eliminate the future corrosion of the vessel but they weren't able to totally eliminate all the potential corrosion paths.

This was known that you were gonna have to continue to monitor it to see if you're seeing any evidence of corrosion. So what they are saying is they're saying "it's not a problem right now but it's like everything else with vessel, you have to continue to watch on how this is progressing."

MEMBER HARVEY: But the vessel is secure

now?

MR. ELDER: The vessel is secure now, yes.

MEMBER HARVEY: Okay, thank you.

THE PRESIDENT: Okay, but this is really important. We'd like a little bit more information. You remember that the big - how does the press used call it? "The old creaky, leaky machine."

And you're the big outage for a long time; you discovered some ways of repairing it. So the question is now that you are detecting some corrosion, how serious are they? Are there any ways of fixing it? In other words, is it consistent with ability to go till 2021?

MR. LESCO: Yeah. Randy Lesco, for the record.

No. The purpose of continuing our inspections is making sure that we don't have "continued degradation". We are, through visual inspections, observing corrosion, slight corrosion. And we have taken steps during when we repaired the vessel to improve the conditions of the vessel to minimize corrosion versus that we're making sure that we had no standing water, our draining system was fixed, we moved more materials and we improved our CO₂ annulus to making sure that we didn't have air in rest.

As we move forward, we continue to improve

our CO₂ with respect to making sure that we do not have air ingress in the annulus. We also are looking at ways of eliminating water into the annulus.

So we continue having water leaking into the annulus that was a contributor to the corrosion and so we have a program to monitoring and lessons learned that we have from the vessel repair to look at well repairs associated with the annulus.

THE CHAIRMAN: So is that an answer that you have no concern about being able to keep this fit for service until 2021?

MR. LESCO: Yeah, the current indications are that we are managing the situation and in the fitness of the reactor.

THE CHAIRMAN: Should you need to repair, based on the expertise you surely developed in-house, is there -- can you continue to repair leaks or possible leaks?

MR. LESCO: Yeah. So when we originally -- Randy Lesco, for the record.

When we originally repaired the vessel, there was a lot of structural work that we had to do. The majority of the repairs were structural in nature because of corrosion and the pitting of the walls.

The strategy of going forward is now we

have a complete understanding of the vessel, the condition of the vessel. And so the strategy of going forward is that we have developed a mechanical sealing technology should we be able to deal with leak we would be able to seal it using a mechanical sealing techniques.

We have currently had that truly in place and it's going through mock up trials as we speak.

THE CHAIRMAN: So that's a new methodology, which has not been, I assume, truly tested and qualified. Is that correct?

MR. LESCO: Randy Lesco, for the record.

That is correct. Although we had used the technique a number of years ago, originally in the NRU vessel back in the early sixties.

THE CHAIRMAN: Thank you.

MR. HARVEY: But before to go until 21, what you said. I think you have to present a report in -- to be -- in 2014 to go -- to extend it from 2016. Am I right to say that?

MR. ELDER: Peter Elder, for the record.

We have asked them to make sure that by the middle of next year they come with a clear path forward on whether they're going to look at operation beyond 2016 or looking towards end of life at that point.

THE CHAIRMAN: Mr. Jammal, you want to add

something?

MR. JAMMAL: Ramzi Jammal for the record.

Monsieur Harvey asked the question is the vessel safe? The answer is yes, sir, the vessel is safe. The discussion that's taken place with respect to repair is more of a reliability issue than it is safety issue. But I'll pass it on to our specialist, Mr. Blair Carroll. If he has anything else to add with respect to the techniques itself and the safety and reliability of the vessel.

MR. CARROLL: For the record, my name is Blair Carroll. I'm a specialist with the Operational Engineering Assessment Division at CNSC.

We look at a number of different programs and activities that AECL has in place to assess the safety of the vessel for continued operation, and that includes the inspection program, it includes the annual fitness for service report that they put together, and things like their leak detection capabilities at the site.

Those -- all combined together, we've concluded that there are -- the structure of the vessel is sound, that it will not lead to a safety significant incident with continued operation, based on everything that we have available to us right now.

What we are concerned about is not so much

the structural integrity but the leak tightness integrity if the corrosion continues going forward. To this point, we have not seen, from inspection data, any measureable wall loss increases from the -- after the repair outage. The inspection tools in some areas are as accurate as plus or minus 5 millimeters and in other areas, plus or minus 1 millimeter, so it's very small increments that we're looking at in terms of the original wall thickness, which was 8 millimeters.

So we're not seeing significant wall loss from the perspective of being able to measure it with inspection tools. What has been observed through visual inspections with cameras is some changes to the surface, which indicate that there is still some corrosion potentially happening, but it's not happening at a rate that we would consider significant or severe that would impact the safe operation of the NRU. But if it should continue, there could be potential leaks in the future and it would have to be addressed, and one of the actions that AECL was looking at is a potential sealing mechanism that could be use.

Doing additional weld repairs might be an issue because you can only weld on the vessel so much before you would -- the stresses imparted by the welding would impact vessel operations, so that's why they've gone

to looking at other methodologies that could be implemented.

THE CHAIRMAN: Thank you. Dr. McDill?

DR. MCDILL: Thank you.

You know, the NRU is a Canadian workhorse, and from an engineering perspective, the repairs to the vessel were remarkable in terms of development tools, numerical analysis of carrying out the work, and from these reports it's clear many good things have been done and much good progress has been made. And I think staffs - they've pointed out that a sentiment of being skeptical has been replaced by cautious optimism, I think, if I can infer.

Nevertheless, the fitness for services -- low expectations, and where staff raises concerns and points out gaps, the AECL document is silent, except I think to say the inspection results did not invalidate the prediction and assumptions; and double negatives always catch my attention.

If AECL had said it validates the assumptions and predictions, it would have been a much stronger word -- set of words. The absence -- some of it came up today, but the absence of an engineering explanation of evidence that corrosion and the problems with the, I think, continued leaking are troublesome.

So my question is a follow up to the previous two. If, and this is, you know, this is no guarantee, this if, this may not happen, but if there is a penetration, perforation, another small leak, I think this is the part that's important to the public, is there any risk to public health and safety that would come out of that? Because if it leaks and it can't be put back into service, well that's unfortunate and really sad, but it's not a risk to public health and safety. So I'll start with the AECL and then follow up with staff.

MR. LESCO: So Randy Lesco, for the record.

If we develop a small leak, as what occurred in the previous event, it does not pose a risk to the safety of the public. It becomes a reliability issue, and then can we attempt to seal any small leaks to allow for continued operation.

MR. WALKER: It's, for the record, Bob Walker.

And I just highlight again that with the incident in 2009 where we developed a leak, what we came to discover is we had structural problems in the (unintelligible) -- this whole circumference of the vessel. So the issue was not to repair the one leak, it was to repair the structural integrity of the vessel. Obviously, should we have a new leak, a pinhole leak or

something of that nature, it's a little different response than what we required in 2009-'10.

I will pick up, though, on the member's comment that we do not yet fully believe we understand the corrosion mechanisms at play. And we have engaged our science and technology experts that are in the process of emulating the corrosion mechanisms in the laboratory so that we can demonstrate to our own comfort level that we fully understand the phenomenon at play and that the corrective measures we're taking in the long-term are the right ones.

DR. MCDILL: Thank you. Staff?

MR. ELDER: Peter Elder, for the record.

Just saying, as Mr. Carroll had said, we have no concerns about the structural integrity of the vessel, which would be the main safety concern. As the Commission will remember during the last leak event, there was concerns about the environmental releases because you're releasing tritiated water.

Since that event, AECL has completely changed the heavy water in the vessel so that the water in there now has 90 percent less tritium than there was before. So in that 2009 event, they were exceeding - occasionally, they exceeded action level on tritium releases to the environment.

That would not happen with a similar-sized leak with the reduced level of tritium in the water. So any of the even minor impacts on environment would be less if you had a leak today than what had happened before, and we also know a lot more about that vessel to be able to say we do not have any concerns about the structural integrity of the vessel.

DR. MCDILL: Thank you.

THE CHAIRMAN: Can I add to the concern, doctor, that you expressed. (Unintelligible) have a history in this file and there is facts and there is fiction, and when the NRU leaks, a lot fiction goes with so-called fact.

So just to give you an example, (unintelligible) has been pushing for a long time about what are we going to do about -- what are you going to do about the light water reflector, you remember that, that presumably since it's light water there is no concern, yet it's being (unintelligible) onto the leaky reactor. And that's all we have to say, leaky reactor, up the river from Ottawa. I don't need to write the place item.

So is there a plan to fix the light water reflector and make this reactor leak free? Yeah?

MR. LESCO: Randy Lesco, for the record.

As I mentioned before, the technology that

we developed for the actual vessel wall repair, we're now looking at using that same technology for actually repairing the leaks from the water reflector, and once we're able to do that we're able to eliminate the source of water which is contributing to the corrosion associated with the vessel. So that's the key, basically use the tooling technology to do the vessel repair and apply it to the leaks in the water box associated with the water reflector.

THE CHAIRMAN: Any idea on when?

MR. LESCO: So the expectation at the next outage in 2014 we'll be able to execute our first repair on the major leak that's actually occurring in the upper water box associated with the water reflector.

THE CHAIRMAN: Thank you. That's very useful.

Dr. McDill?

MEMBER McDILL: Thank you. And my second question is of course on liquids -- liquids in tanks. So there is a kind of a one paragraph or two paragraph description from the AECL perspective and about the same. Where do things stand on cementation and how is the FISST tank holding up; temperatures are good still? And can you just give us a bit more than the not very extensive material and the -- in the summary?

MR. LESCO: Randy Lesco, for the record.

As part of our cementation project, we continue to develop formulations to allow us to proceed with cementation of liquids in the various tanks across the site. But as part of that project we are actually eliminating some of the liquids and processing through our waste treatment centre as a part of reducing the volume.

So this past field season we were able to treat 6,000 litres of water in those tanks. The plan is to process another 30,000 litres next field season in 2014 with the remaining 10,000 litres in the field season of 2015.

So we're reducing the risk in those single walled tanks by actually processing the liquid in our waste treatment centre.

With respect to the FISST tank, there are no issues that we have with the FISST tank. We do have some challenges with respect to thermal welds that are actually located within the FISST tank that we are looking at actually plugging, but other than that there are no issues with the FISST tank, it remains fit for service.

MR. ELDER: Peter Elder, for the record.

I don't think -- I'm going to say on the FISST tank, we don't have any new issues. We raised issues about the thermal welds. And our concern, again it's a

concern not a safety issue right now, is lack of redundancy on those measurements. And that AECL has been investigating how to make sure that they have more than one way to measure the temperature in the tank, but the tank itself has been operating as designed.

THE CHAIRMAN: Well, what surprises me about the report on both side, there was no mention on the safeguard, the non-proliferation, in the actual reports, and you know, maybe you should have now in the public that there is a lot of IAEA oversight on some of the material onsite, including the FISST. So I was surprised not to find a little bit more on the international obligation being fulfilled here.

So I see one of the CNSC staff will want to make a comment on that and maybe AECL can make a comment about that.

MR. ELDER: So I'll let Karen Owen-Whitred gets ready on what she wanted to say on this one.

As we said at the beginning, where we thought that there was not a significant development and we sort of had status quo on the safety and control area, we identified in the chart that it was still satisfactory from last year but did not add a lot of details about what was going on in that area, if it was mainly status quo.

MS. OWEN-WHITRED: Karen Owen-Whitred, for

the record. I'm the Director of the International Safeguards Division.

Yes, I can confirm, as you said, that there is significant IAEA oversight of this vessel in particular with respect to safeguards. And I can also confirm, as Mr. Elder just said, that the rating that we've given in this area is satisfactory, and I understand that's why it wasn't reflected particularly in this report.

THE CHAIRMAN: AECL, do you want to add anything to this?

MR. LESCO: Randy Lesco, for the record.

We continue to meet our obligations on IAEA safeguard requirements for the number of facilities that we have at the Chalk River site.

THE CHAIRMAN: So maybe it's the time, without getting into some detail here, is that there's been a lot of all of a sudden press interest in the end status of the FISST. And as I don't think it's a state secret that there's been a commitment to allow for some of the material to get repatriated by the U.S.

And, as I'm just stating the obvious, that until we get an application there's nothing we are interested in saying, doing, and when we get an application it will be processed according to all the rules and obligations of both here in Canada and the U.S.

So I assume that you're going to send us an application in the fullness of time. I don't know if you want to add anything to that or not.

MR. WALKER: Bob Walker, for the record.

Mr. President, that would be exactly the case.

I can confirm that the Board has recently approved the definition work for the liquid waste cementation project, and that is now out for competitive bidding from the supply chain on solutions to move forward based on cementation formulation that AECL has provided.

That is the kind of information we need to ultimately determine the ultimate solution, and once that's determined that material would be coming forward to CNSC staff for regulatory oversight.

So I'm speaking of the larger liquids waste project.

THE CHAIRMAN: Okay. Thank you.

Monsieur Tolgesy?

MEMBER TOLGESY: Monsieur monsieur le president.

I will come back a little bit to the subject which we were talking. Before I should say that I was satisfied and I expressed even my congratulation to AECL for the successful vessel repair what you were doing

where high technological skills were developed and new technologies introduced, and I remember I was asking you will market this technology.

So, this being said, I also understand that NRU is a facility of some age. It's close to my age. Aging you cannot prevent, you could control to some extent and mainly you shall manage it.

Now, in the case of I will say several things what you were talking in this report, we are talking lots about the ceiling. I will ask a question about radiation monitors, Etc.

This is not the aging but it's a management practice, and this is a safety control area where Chalk River is rated below expectation since 2009. Although staff sees an improving trend or satisfactory rating to be achieved by end of 2013 and, Mr. Lesco, you firmly confirmed that you will reach it so we have a date.

Now, when I'm looking at that, this management system, coming back to this ceiling, where you have problems with the plaster which was coming down twice, you were saying what we do is undertaking the repair with cladding panels and 75 percent is completed. But is this cladding panel the only corrective action? What is done to eliminate the cause? I mean the steam leaks. What you do for that? Because just to put the

panel is like, you know, you say I put the plaster but maybe the patient will die. So what, what you do to eliminate the cause of this event?

MR. LESCO: Randy Lesco, for the record.

You know, it kind of speaks to making sure that we have the appropriate programs in place, so as an example when I talk about Voyageur 2 and problem identification resolution, that's one of the programs that we have in place so that we actually understand root causes of events.

And so that helps us identify problems, put in place corrective actions including management action so that we don't have repeat events. So then in particular case with respect to the ceiling issue with NRU is that did we have appropriate maintenance with respect to our steam lines or root lines in that space above the ceiling, right?

So that points to a weakness in our maintenance program. So how from a management perspective are we going to improve in that area? And so as an example our root cause, we need to making sure that we have proper maintenance inspections of our steam lines in that ceiling going forward.

And so the challenge that we have here is going forward, you know, are our maintenance programs, our

system health programs strong enough to making sure that we have event -- we prevent events going forward? Right and so we're moving to, in that direction; especially with NRU.

So for example, our system health program to monitor individual systems and equipment within NRU we've staffed up to 30 people, right. And we're moving forward in terms of improving that area.

We've also put in place aging management programs so that we can actually understand what are the degradation mechanisms that are associated with systems so that we can take corrective action before we have an issue.

MR. TOLGYESI: You see, probably what you were just saying that what you were talking about maintenance and the systems what you do, I expected to see that here. You know, what the corrective action for the ceiling business. But it was not there.

I will go back little bit, my second thing is just back a little bit to this loss time injuries and severity. Because you're talking about severity, number of loss time accidents, severity ratings has decreased but -- and what you were saying that we see that loss time injuries increased, close to double compared to 2010; in 2012 just 21 compared to 10.

Page 19 of the presentation of the 13M, 14.1, it's AECL's presentation, page 19, I'm sorry. And you said its increase is partly due to improved reporting system. If it's partly, it means something else is there also. But I don't think so we should compare just the number of accidents. We should compare the frequency because you compare it based on 200,000 hours. What, so you could compare apples to apples. You are small or large company, you could compare that.

The frequency is there but severity, I don't see, what's that? It's the number of days lost per accident, number of days lost per 200,000 hours as we had this morning as a stat or number of days as severe accident. So I don't see what is this.

And I don't know how you compare your performances to the industry, to other nuclear power plants or electrical associations or I don't know, who is looking after this?

MR. LESCO: Yeah. So, Randy Lesco, for the record.

As I stated, you know, our goal is to get to zero loss time injuries. That is the goal. Right. And we want to make it sure that we have appropriate programs in place to making sure that we can achieve that.

It also includes the making sure that our

leaders are actually in the field doing appropriate observations of portions of our staff.

I can say looking at the data that with respect to frequencies and severity, if we compare to typical industries, our performance is much better than a normal industry, right.

Recognizing our site is not simply operating our reactors or operating our facilities but we continue -- we have to decommission the site. We're also refurbishing and rebuilding the site, right. So it's not to "typical nuclear power plant operation".

MR. WALKER: Bob Walker, for the record.

Mr. Lesco's observation that we will improve in this area. So the observations that the Commission are taking on are issues that sees management as well as the Board.

I want to share with you an anecdote, however. I had a meeting shortly after I came to the company with my 175 managers and I was talking about loss time injuries. I was saying "our loss time injuries frequency is running around .5. Are you concerned?" I got a blank stare.

When I said "We've had 15 injuries this year. Are you concerned?" And my managers says, "We are." So I insisted that we report the absolute number of

injuries to our employees and to ourselves.

If you go on the AECL internal website, splashed on the front page, right at the top banner, are the statistics on our loss time injuries and it is RED. It is RED because we want to improve.

Under Mr. Lesco's direction, we are taking constructive measures that include improvements to site maintenance. It includes safety moments where we ask employees to look at their footwear. To look at, are we following the cleared paths or do we take the shortcuts? Are we following our procedures for lifting? Do we reach over and try to lift a heavy object? And the evidence is clear that we are not consistently doing it.

Now within that, the numbers are the numbers. And I would observe that one can come back and compare the statistics to other industries and say compared to a general industrial site we're actually pretty good. That's not the issue. We have injuries. And our objective is zero. And we are taking, what I consider to be appropriate actions. I get challenged by the Board on this on a regular basis, as you are doing rightly, and our commitment is a goal of zero.

THE CHAIRMAN: I think we -- actually in agreement, but I don't know it's either or, I mean we could use both. I just want to understand what the units

are. So on 2012, 21 injuries, total number of injuries on site.

MR. WALKER: Total number of injuries -- Bob Walker, for the record.

Total number of injuries that resulted in a loss time.

THE CHAIRMAN: Okay, but it is -- that is absolute number. This is the number of events.

MR. WALKER: Absolutely. Absolute number of events.

THE CHAIRMAN: What's the loss time in this frequency here?

MR. WALKER: That in fact is the next column. It's the .68.

THE CHAIRMAN: What's the unit? How do you calculate ---

MR. WALKER: So that is the number of loss time injuries per 200,000/hrs workers.

THE CHAIRMAN: So it is per 200,000/hrs.

MR. WALKER: Yes it is.

THE CHAIRMAN: The units are not specified so we don't know.

MR. WALKER: True. Fair comment.

THE CHAIRMAN: And the long time severity? The last column?

MR. WALKER: That is the number of days lost per injury normalized by 200,000 hours of work. It is the same statistics that the nuclear industry uses.

THE CHAIRMAN: Okay, so I think, using those we can actually do some comparison. Of course at least on nuclear sector even though we are comparing apples to apples -- apples to oranges I meant to say, but I still think you can get a feel as to how good or not you guys are.

MR. WALKER: Just to say, when we are talking 200,000 hours, why we are talking about 200,000 hours? Because one of -- one year is about 2,080 hours, working hours which means that we have this -- this is a number per 100 employees during a year. Okay, so when you say the frequency is .68. This is a .68 injuries, loss time injury per 100 employees, okay.

THE CHAIRMAN: It's just that if you use the same units you can compare them.

MR. WALKER: Yeah.

THE CHAIRMAN: That's it. Good. But I'm with you. I still like the number 21 on the table, does everybody understand?

That's it? Oh, okay. So we are now into the next round. And Ms. Velshi.

MEMBER VELSHI: Question on NRU control

rods, staff CMD 13-M14 on page 22. In there you discussed three significant events in 2012, one of which resulted in an undesired and uncontrolled reactivity change -- which sounds rather ominous to me. And even though there's a statement that this does not negatively impact the primary safety of the NRU, can you comment on what other safety implications -- what does this do to defence in depth, safety margins and any mitigation measures that you may have taken to address this? Question 2 AECL.

MR. LESCO: Randy Lesco for the record. So the incident that occurred actually is reflected in one of the cases that we actually analyzed in our safety case. So it is an event that we recognized. So the event that occurred is within our safety basis. The -- in this particular event, the reactor was shut down so it was basically subcritical but in terms of operating, we do have the ability to intervene through our -- through operators as well as our automatically safety shutdown systems coming into play with shutting down the reactor.

What's kind of more important here is how we're trying to improve control rod reliability going forward. And in terms of remedial action, we have increased our prestart-up checks to verify the performance or functionality of the control rods. But in terms of long-term, we have actually set up a control rod task team

to actually improve control rod reliability. So for example, currently we have installed two new control rod modules to improve the performance of control rods going forward. The expectation is that within the next coming year that we'll continue to replace components within the control rods to improve this reliability.

MEMBER VELSHI: Thank you.

THE CHAIRMAN: We're into one question per round now. Are we going there? Unless you have -- yeah, but all means.

MEMBER McDILL: So for the public who live, you know, hereabouts, is there risk to health and safety if the rods do not behave as expected?

MR. LESCO: So, Randy Lesco, for the record. We have safety systems in place to ensure that the reactor automatically trips should we have issues with the control rod performance.

MEMBER McDILL: But in the case that's mentioned there was a manual trip, it wasn't an automatic trip. The manual interceded before the automatic?

MR. LESCO: So, Randy Lesco, for the record. That is correct. The operator had a -- this abnormality associated with the control rod and he actually manually tripped the reactor. Recognizing the reactor was already shut down was subcritical.

MR. ELDER: Peter Elder, just - Peter Elder record and confirmed. We don't, in the events, have any concerns about what we call the trip coverage -- the fact that it would safely shut down on there. There are lots of various trips on this reactor. We included this also partly, not as a -- only from a safety perspective, but there has been a lot interest about the reliability of the reactor. And, you know, we want to make sure that we are reporting performance that we are talking about reliability issues as well. So this is -- yes, this is by and large a reliability issue and there's not a safety concern. There's a fully separate shutdown system that works on gravity that has been very reliable. We do plan on going back in and saying it's a sign of -- you know, it's example of where they still have challenges around aging and reliability of the systems that will affect operation and therefore isotope production and other things that the reactor does.

MEMBER VELSHI: So we've talked about reliability issues with many of these areas or issue areas, so unlike nuclear power plants where we see a forced loss rate, we haven't seen a metric here. How do you measure your reliability, is it -- or even to given an indication of how many forced shutdowns there have been to give us an understanding of the number of upsets which of

course triggers a whole kind of safety concerns in themselves besides reliability?

MR. VESCO: So, Randy Lesco, for the record. We do have metrics associated with reliability of NRU and availability of NRU. We also track how well we perform in terms of meeting our isotope commitments to the market, as an example. Over the past year, as an example, we have met 98 percent of our commitments in terms of isotope supply. And that's kind of a reflective in terms of NRU performance. Based on our availability of capacity numbers associated with the NRU we are showing some improvement in terms of availability with the expectation that that performance will improve.

MEMBER VELSHI: So it's probably a metric that should be included in the report because I think it will be very helpful to see what the trend is. This is for staff.

MR. ELDER: Peter Elder, for the record. I will -- we'll look into it and we have actually, you know, there are two things that are very important from a safety perspective about a research reactor versus power reactor. One is this is a low pressure system so that the transient when you shut down is much -- significantly less severe than you have with a power reactor where you're going from high pressure to low pressure. And -- so therefore, the

number of trips you have to look in -- you know, unexpected trips and that, you have to really look into context. It's not unusual for research reactors to have dozens of trips, especially when you get into when you're doing experiments and you will put extra trip -- extra shutdown parameters around a particular experiment. So if you looked at -- I guess we could look at what would be comparable in talking to some of the other research reactors like McMaster and see if we can come up with something that is a useful metric. Because it -- not only you have to look at year over trend for one reactor, you'd like to compare it. But we will look into that, yes.

THE CHAIRMAN: Dr. Barriault.

MEMBER BARRIAULT: Thank you, Mr. Chairman. On a performance of the CNSC -- on a performance rating, you have management system below expectation and you've got fitness for service below expectation and what my question is is that is there anything there that could impact on safety -- either in combination or by themselves or are you concerned about the safety issues associated with these below expectation ratings?

MR. ELDER: I guess -- obviously, there is a -- we look at them because there is a safety implementation to them. And you know, if you look at the definitions - and we did do a fair bit of thought into

defining the rating system. There is -- there are steps below below expectations and so that -- I'm saying when you look at it from a defence and depth point of view, you don't -- you never rely on one barrier. And we're saying there are -- this barrier is not fully effective all the time. But it's not degraded enough to say that it's unacceptable to say the hole is big enough to cause a safety concern right away. So a management system that you're improving, you don't -- you may miss, as Mr. Lesco had said, you may miss -- you may not get the correct solution all the time for all your little problems. But it's good enough to make sure that you avoid the bigger problems.

On the fitness or service what we're looking at and what we're seeing from our analysis on this one is -- again, what they talked about is they are having to take corrective actions to address safety issues rather than being able to have a system that proactively prevents those issues. But none of the issues themselves are immediate concerns but they do need to put into mitigating measures to make sure that the plant remains safe. So there's no overriding concerns about these below expectations but you don't want them to exist for long periods of time.

MEMBER BARRIAULT: Over the next 12 months,

do you see them moving into satisfactory on all these?

MR. ELDER: What our position and then back in is to be clearer, they are much closer on the management system than they are on the fitness for service and it's just basically that -- the size of the challenge, and that the programs that you have to, you know, they've been working on the management system. If we went back even longer, you know, staff has been complaining about the management system for much more than the three years that we're showing here, and we know it takes a while to -- to make those improvements. We are now seeing those improvements starting to really progress, yes.

The -- the fitness for service, they had a program. To be clear, it got delayed a bit while they were repairing the vessel and now they're back in to address those programs and we're not yet seeing these ones or bite at the reactor phase yet, but we're, you know, we're not saying, you know, the programs are what you would expect. They're using industry best practice. It -- but it will take a while for those ones to actually make a real measurable performance difference.

MEMBER BARRIAULT: Okay, would AECL like to comment on this please?

MR. LESCO: Yeah, Randy Lesco for the record, you know, we do have projects to actually improve

the infrastructure and improve reliability of our plant, and so, for example, the integrated improvement plan that we have in place, one part of that is actually going in and actually replacing equipment with new equipment to improve the performance and reliability of the plant.

THE CHAIRMAN: I guess, just so we are clear, you know, you have this performance rating table with all the satisfactory/below satisfactory. I guess, since you are in front of us here recommending that we should not shut it down, I assume the bottom line is that there is safety, that you're comfortable enough in your bottom line analysis, given all the improvement being on-going that this is safe to continue to operate. Isn't that the way to summarize how you ---

MR. ELDER: Peter Elder, for the record, yes, and on -- in the CMD, page 46, it has actually the definitions of the ratings and below expectations is, you know, we said marginally ineffective, however, you know, this improvements are required, identified, but in the definition to get just below expectation, it's a licensee is taking appropriate corrective actions, and that's different from unacceptable, which is below or to say that they need, you know, without -- the unacceptable, quote the definition, without corrective action, there is a high probability deficiencies will lead to unacceptable risk.

THE CHAIRMAN: But, I'm making a different point and that is what is the total summary bottom line?

MR. ELDER: The totally summary bottom line, if we felt there was an issue that needed attention and the changes to licence or changes to the condition, we would be bringing this to you, yes.

THE CHAIRMAN: So the quick answer ---

MR. ELDER: So the overall conclusion is it is satisfactory. They are operating safely, yes.

MEMBER BARRIAULT: It is safe, but not as safe as it could be. Is that what you're saying?

MR. ELDER: Yes, and -- and some -- if you look at it from defence and depth, maybe you're relying more on one barrier than another, where you'd like to be able to have them sort of equal to the extent possible.

THE CHAIRMAN: We should be very careful with our definition here because the absolute safety is with shutting down and it don't operate and they go home. If you don't do anything, it's very safe, I assume. So I'm really -- we really got to be careful in how we characterize those things. I think I'm just satisfied that you -- since you're not recommending putting them shutting down, then you're satisfied they can continue to operate in my assessment of the definition here.

MR. ELDER: Yes and -- and to be, you know,

to be -- look at some of these events that we're talking about, you know, AECL had to shut themselves down for a short period of times to put in the necessary measures in place to keep it safe to operate.

THE CHAIRMAN: Okay, Monsieur Harvey.

MEMBER HARVEY: One last question. It's on page 23 under NRU radiation monitors. Many monitors in the NRU surrounding environment -- I mean, several areas containing nuclear system have fixed radiation monitors to monitor employees of an increase in the radiation field. So it's important equipment and it surprises me that many of them have been out of service for extended period of time. I realize that a part of the problem has been solved, but despite that there is two which are to be fixed and I was surprised that it could be like this for an extended period of time. So it's security matters and how can you explain that, and what is the problem? Why it's so long to get it fixed?

MR. LESCO: So, Randy Lesco, for the record, I'm going to be absolutely clear here is that when we have issues with equipment, for example, like radiation monitors, we make sure that our employees are safe. So, for example, we'll make sure that we have temporary installations or portable equipment making sure that when one -- when our people execute work on facilities, they

remain safe and they have -- there's protective measures in place. With respect to the -- the timelines here, we continue to -- to making sure that we can put them in place in a timely fashion and making sure that we have proper work plans in place with respect to installations. So we have a planned process making sure they're installed in a timely fashion with respect to our -- our work management systems.

MEMBER HARVEY: But again, what is the problem? What is so difficult -- it's monitors, so I agree that you can bring portable instruments, but it's -- it's not a fixed instrument that are there and you don't have to do anything. So why it is so difficult to fix it?

MR. LESCO: Randy Lesco, for the record, so some of the challenge that we have is making sure that we have the -- the right specifications going forward, making sure that we -- we go to market to get the -- the proper equipment, order the equipment, buy the equipment and put it in our work cycle in terms of getting it installed.

MEMBER HARVEY: Staff, do you have any comment about that?

MR. ELDER: In terms of -- Peter Elder, for the record, I -- I would say that the section speaks for itself. They gave us the original schedule. We thought it was unreasonable in terms of it was taking too long, so

we actually said no, you need to come back up and we took a stronger enforcement action on this one. So I can't, you know, as I said, other than I, you know, I'm going to say we've raised the issue. They are dealing with it, but to say, in this case, they were using spare, you know, temporary monitors in those locations, it's just concern about being reliant on temporary monitors that was our real concern.

MEMBER HARVEY: Thank you.

THE CHAIRMAN: Is that associated with the whole radio-protection program as a whole?

MR. ELDER: It's -- it's one element of the radiation protection, but we sort of looked at it as a equipment for service issue as specifically in NRU rather than a program element is -- is actually how they were maintaining and making sure the equipment that was in place in NRU was continuing to function as designed.

THE CHAIRMAN: We had some -- there was some issue with sort of the certification of the various supervisors of the radio-protection. Are you satisfied that radio-protection is being managed properly?

MR. ELDER: So, Peter Elder, for the record, AECL made some changes in how they were organizing their radiation protection program. I'll ask Kim Campbell to give our -- give details of our assessment of what

they've put in place.

MS. CAMPBELL: Kim Campbell, for the record. NRU was reorganized to have an RP organization in 2011. This RP organization takes care of routine operations within NRU, however there is still an AECL corporate RP organization outside of NRU. This organization has the health physicist reporting to it. The health physicist is independent of the NRU organization. However, their function, which AECL can comment on, is to provide the non-routine, high-hazard work assessments for NRU operations and, therefore, it does remain independent of the NRU operational line.

THE CHAIRMAN: So the way to report in the hierarchy, do we believe is appropriate? And I'd like to hear from AECL's perspective.

MR. LESCO: Randy Lesco for the record.

Yes, we have a radiation production program that looks after the entire site. And as Ms. Campbell has indicated, is that as part of the organization, we put in place a mandatory response for RP to look at the day-to-day operation of NRU.

As part of our program, we have actually certified health physicists for NRU specifically to deal with work that needs to be done in NRU that requires radiological assessment, for example. And that's why we

have certified health physicists specific for NRU to deal with those issues.

THE CHAIRMAN: Thank you. Dr. McDill?

MEMBER McDILL: Second last quick question. With respect to the active drain system in March, there's supposed to be a new permanent transfer line between Buildings 468 and 242. Is that still on schedule for the end of March or sometime in March?

MR. LESCO: Randy Lesco for the record. That is correct, it's on schedule for the end of March.

MEMBER McDILL: And as part of that, when will there be an investigation or I guess that's the root cause coming out on the other failure between 250 and -- no, sorry; 375 to 243?

MR. LESCO: Randy Lesco for the record. That root cause is ongoing and it's in its completion stages. And so they expect the results to be out shortly, in the next couple of months.

MEMBER McDILL: Staff, do you have any new concerns with respect to the active drain system?

MR. ELDER: Peter Elder for the record. I don't think we have any new concerns other than what we have listed and we obviously will be looking into what comes out of those investigations of the failures that they have found.

MEMBER MCDILL: Thank you.

THE CHAIRMAN: Monsieur Tolgyesi?

MEMBER TOLGYESI: Merci, monsieur le président.

On page 10 of the staff presentation is NRU Fire Hazard Assessment. There were some Commission meetings 2009, there were some findings, which we expected they were completed prior to licence renewal in 2011.

Ninety eight (98) percent was completed. Now, in 2012, September 2012, you submitted the report to the staff where you expressed that all is completed.

However, the staff's opinion, there is not fully -- the initial findings from fire hazard assessment.

What was not completed? That's a question to staff.

And the question to AECL will be when it will be completed?

MR. ELDER: Peter Elder for the record.

I think we've -- the main ones are there in terms of his reduction of combustible loads in the attic of NRU and then in some specific -- the fan rooms of NRU where they had not, to our extent, completely removed all the combustible loads in those areas.

Yes, and also I'm reminded there is also completion of the diesel leak detection system.

MEMBER TOLGYESI: AECL, when do you expect to be completed?

MR. LESCO: Yeah, so Randy Lesco, for the record.

We spent a significant amount of time and effort in terms of removing -- reducing the combustible load in the attic. When we had staff come and do the inspections, there were basically some new findings that they realised and expect us to deal with.

And so we are currently in the planning stage in terms of how we are going to address those new findings from CNSC staff, but these are minor issues compared to the amount of extensive work that we've done to reduce the combustibles in the attic.

MEMBER TOLGYESI: So according to you, it was completed and what's not done is the new findings. That's what you're saying?

MR. LESCO: That's the new finding from where we stand because of the further inspections that CNSC staff looking -- asked to fix.

MEMBER TOLGYESI: Staff?

MR. ELDER: Peter Elder for the record. I don't know if we want to get into a discussion about whether it was.

We were looking at whether it was in or out

or should have been in. I mean we looked at the initial fire hazard assessment and said, there was a fire hazard in this location. So when you do an inspection, you go back in and say, can you see the fire hazard in that location or not?

So I think they made their best effort to address it. Our inspectors came in and felt that it was not fully addressed and asked AECL to do additional work.

So it's just an example -- you know, and said, and we would agree that AECL did make considerable effort to improve the fire protection in NRU, but it's just an example of showing that we do go back in and confirm that they actually do, not only what they said they were going to do but they actually also have addressed the initial problem that was raised.

THE CHAIRMAN: Okay. Ms. Velshi?

MEMBER VELSHI: A question on security.

Page 34 of Staff CMD, on the second last paragraph, there's a statement that in late 2011, CNSC staff identified potential indicators of a reduced security culture at CRL. It seems rather a vague statement.

I don't know if this is something that can get discussed in a public forum, but I wondered if you could elaborate on what that reduced security culture was and when is that expected to be resolved?

AECL?

MR. LESCO: Randy Lesco.

To address the concerns of CNSC staff with respect to security culture, we have brought in an independent third party to assess our security program. That report was issued. It identified areas that we had to improve on, and we are preparing an action plan to address those findings with the expectation that action plan will be complete by the end of March.

MEMBER VELSHI: Thank you. So the first part of the question maybe that better belongs to staff. So how did this reduced security culture manifest itself then?

MR. ELDER: Peter Elder for the record, and I'll try to keep it in the public.

Essentially, it was a case where we were trying to look at -- there are a number of individual security events, and we were looking at this saying, is this isolated to an individual, and the actions of an individual or is it a wider problem about how AECL was addressing security?

So when you get a number of instances which are isolated -- are not related but have similar threads to them, we said, well, it raised some concerns saying are they just -- yeah, they were more than one individual

instances. Are they related or not or are they -- and is there a possibility of a wider concern around how security is being dealt with? So again, there were ---

THE CHAIRMAN: About security expert here --

MR. ELDER: Yeah. So Michael Beaudette can add -- maybe add something.

MR. BEAUDETTE: Michael Beaudette, Director of Nuclear Security Division, for the record.

Without going in detail, I think the details -- the very details should be in camera, but I do want to echo Peter Elder's comments; is that it was a number of incidents over a long period of time, and we were in constant communication with AECL on those incidents.

They weren't necessarily directly related. It's just that we seemed to have the same conversation repeatedly over a long period of time, and we made a suggestion that they might want to have a look at it. And then went proactive and had a third party organization come in and do a very thorough review.

So we can get into the details in camera, but it was a very good reaction on their part and we were impressed with -- with the outcome.

THE CHAIRMAN: Thank you.

Dr. Barriault?

MEMBER BARRIAULT: That's all Mr. Chairman.

Thank you.

LE PRÉSIDENT: Monsieur Harvey?

Dr. McDill?

MEMBER McDILL: One last question. This -- is NRC still running the scientific experiments? Are the beam lines still up and running is -- is, in terms of basic science in Canada is the -- and are you still functioning well?

MR. WALKER: Bob Walker, for the record.

Indeed it is. The CNBC, the Canadian Neutron Beam Centre continues to operate. The NRU is a multi-purpose research reactor and the concept of neutrons for science is one of those missions. So that is the current situation.

I would highlight that when we talk about the decision on the NRU beyond 2016, there is both a fitness for use and a fitness for purpose argument.

We've obviously been focussed on the fitness for use argument. But you know, played into the restructuring decisions on AECL, it will also explore the utility of those missions going forward in the long-term for Canada.

MEMBER McDILL: Staff, anything to add?

Probably not, but anything to add?

MR. ELDER: Peter Elder.

I don't think we have anything to add on that one.

MEMBER HARVEY: The last -- you were mentioning in your presentation, AECL, that you started decommissioning the heavy water upgrading plant.

MR. LESCO: Yes.

MEMBER HARVEY: And does it have some -- any impact on operations and -- and when you'll expect it will be completed?

MR. LESCO: Randy Lesco, for the record.

The expectation is that the decommissioning of the heavy water upgrade will be complete by the end of this year.

MEMBER HARVEY: There's no impact on the operations?

MR. LESCO: The heavy water upgrader has been out of operation for a number of years. And has no impact on our current operations.

THE CHAIRMAN: Ms. Velshi?

Everybody done?

I just have a couple of quickies.

Still on the decommissioning -- and maybe I -- this is a bit out of scope, I'm going to ask it anyhow.

Decommissioning, in the mandate you're going to get from the government, presumably somebody's going to take responsibility, accountability for all the decommissioning liability. I'm talking about Gentilly-1, I'm talking about Douglas Point, I'm talking about Whiteshell, not to mention everything else.

So are you going to -- when are you going to have -- or will you have soon one of those -- one decommissioning plan that will put in all the obligation and I assume there'll be some dollar value associated with this?

MR. WALKER: Bob Walker, for the record.

Indeed, the federal government's Nuclear Legacy Liability Program is addressing it -- precisely the issue that the President is raising. There is a comprehensive 70-year plan that's addressing all sites under AECL purview. And AECL on behalf of government is responsible for all those AECL proto-type reactors that were part of CANDU technology development NPD, Douglas Point and G-1.

There is a 70-year plan with a substantial dollar value associated with it that's reported annually by AECL as part of our annual plan.

THE CHAIRMAN: Well one of the reason, or a couple of the reasons we are asking is you know, it's very

topical now in Quebec about what to do, where to bring Gentilly-2 with Gentilly-1 together. It sounds like it makes sense to work together. But it's two governments. I'm not sure anything makes sense necessarily.

So I don't know if -- if -- I know that some of our people were talking to you about that. And is there something that in the near -- very near future can be seen or discussed more in -- in the public domain?

And -- and one of the real reasons now this is coming at us very quickly is because we are talking about the DGR, the two DGRs -- they, the one of the low level and intermediate level that's being discussed right now. And the long-term fuel and how do you guys fit into all of this? Anything you can add to -- to our knowledge on this?

MR. WALKER: Bob Walker, for the record.

There's a number of matters that relate to the 70-year plan for dispositioning all of the liabilities. They are under study now. None of those that reached a point where decision-making at a policy level by the federal government is occurring. So I believe it would premature for me to speculate further on what this is.

I would highlight the key point here that AECL provides the technical backbone to the liability

dispositioning. But decisions for example on the ultimate waste solution or scheduling of reactor decommissioning are policy matters that ultimately would be taken by NR Canada at an appropriate time, Natural Resources Canada, at an appropriate time.

THE CHAIRMAN: Okay. Thank you.

I just have one last question. You -- you undergone -- I'm always interested in you know, staff culture, moral. You've gone through some pretty difficult time through a strike. So how did that go? And are you over it?

MR. WALKER: Bob Walker, for the record.

So just to correct the -- for the record, we did not actually have a strike. There was a strike of course at -- witnessed at CANDU Energy with its scientists and engineers but not with AECL. We had a number of our collective agreements that went through the full spectrum of conciliation processes. And there was the possibility of strike in that solution. But we managed ---

THE CHAIRMAN: Oh, I stand corrected. And I --

MR. WALKER: --- we managed to get agreements done through constructive relationships with our unions before we got to that point.

The larger question on moral is of course a

concern that any company would have. We're moving forward to meet our commitments as Canada's premier nuclear science and technology organization. There are lots of great results coming out of the labs.

People are encouraged and committed to deliver on the work that they're conducting. Obviously there's an interest in the government decision on restructuring and be able to move forward in that regard. And we'll manage the situation accordingly.

THE CHAIRMAN: Okay.

Anything else? Anybody else have a last word on this?

Okay. Well thank you.

Thank you very much.

And I understand this concludes the -- the meeting, or the public meeting at least. Right? For today.

--- Upon adjourning at 5:25 p.m./

L'audience est ajournée à 17h25