Canadian Nuclear Safety Commission

Commission canadienne de sûreté nucléaire

Public meeting

Réunion publique

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Public Hearing Room
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280 Slater Street
Ottawa, Ontario

Salle des audiences publiques
14e étage
280, rue Slater
Ottawa (Ontario)

Commission Members present

Dr. Michael Binder
Mr. Dan Tolgyesi
Dr. Sandy McEwan
Ms Rumina Velshi
Mr. André Harvey

Commissaires présents

M. Michael Binder
M. Dan Tolgyesi
Dr Sandy McEwan
Mme Rumina Velshi
M. André Harvey

Assistant Secretary:

Ms Kelly McGee

Secrétaire-adjointe:

Mme Kelly McGee

General Counsel:

Mr. Denis Saumure

Avocate générale :

Me Denis Saumure

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Ottawa, Ontario / Ottawa (Ontario)

--- Upon resuming on Thursday, October 1, 2015
at 9:00 a.m. / L'audience reprend le jeudi
1er octobre 2015 à 9 h 00

MME McGEE : Bonjour, Mesdames et Messieurs. Bienvenue à la continuation de la réunion publique de la Commission canadienne de sûreté nucléaire.

Mon nom est Kelly McGee. Je suis la secrétaire-adjointe de la Commission et j'aimerais aborder certains aspects touchant le déroulement de la réunion.

We have simultaneous translation. Please keep the pace of your speech relatively slow so that the translators are able to keep up.

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

Please identify yourself before speaking so that the transcripts are as complete and clear as possible.

La transcription sera disponible sur le site Web de la Commission la semaine prochaine.

I would also like to note that this proceeding is being video webcast live and that archives of these proceedings will be available on the CNSC website for

a three-month period after closure of the proceedings.

Please silence your cell phones and other electronic devices.

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

President Binder...?

THE PRESIDENT: Thank you, Kelly.

Good morning and welcome to the continuation of 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 those joining us via the webcast.

I would like to introduce the Members of the Commission.

On my right is Monsieur Dan Tolgyesi; on my left are Dr. Sandy McEwan, Ms Rumina Velshi and Monsieur André Harvey.

We have heard from the Assistant Secretary, Kelly McGee. We also have with us here today Monsieur Denis Saumure, Senior Counsel to the Commission.

MS McGEE: The *Nuclear Safety and Control Act* authorizes the Commission to hold meetings for the

conduct of its affairs.

The agenda for this meeting was approved yesterday. Please refer to the agenda 15-M38.A for the complete list of items to be presented today.

***CMD 15-M41/CMD 15-M41.A**

Oral presentation by CNSC staff

THE PRESIDENT: The first item on the agenda is an update from CNSC staff on Cameco Corporation's Decommissioned Beaverlodge Mine and Mill Site, as outlined in CMDs 15-M41 and M41.A.

I understand that we have a connection with Cameco Corporation. Mr. Mooney, can you hear us?

MR. MOONEY: Yes, we can, quite clearly. Can you hear us?

THE PRESIDENT: Yes, we can.

And I understand also that we have Mr. Cunningham for Saskatchewan Ministry of Economy.

MR. CUNNINGHAM: Yes, sir.

THE PRESIDENT: Mr. Cunningham, can you hear us?

MR. CUNNINGHAM: Yes, I can.

THE PRESIDENT: Okay. You are there with them, okay.

MR. CUNNINGHAM: Yes.

THE PRESIDENT: So let's start with the presentation from CNSC. I understand that, Dr. Newland, you will make the presentation. Please go ahead.

DR. NEWLAND: Thank you.

Good morning, Mr. President, Members of the Commission. My name is David Newland. I am the Acting Director General of the Directorate of Nuclear Cycle and Facilities Regulation.

With me today are Jean LeClair, Director of the Uranium Mines and Mills Division, Charles Moreau, Project Officer with the same Division, and we have the rest of the CNSC team for the project as well.

In April 2013, a public hearing was held to discuss the licence renewal for the decommissioned Beaverlodge mine and mill site which is managed by Cameco Corporation. The Commission was updated on the process that was followed to select remedial options for the site, the final options that were selected, how performance would be evaluated and the process for transferring properties into the provincial Institutional Control Program.

In May 2013, Cameco was issued a 10-year licence to proceed with the remedial work and continued management of the properties. CNSC staff committed to providing to the Commission a progress update of the

project.

In 2014, CNSC staff provided to the Commission a list of performance objectives, performance indicators and a proposed timeline for the transfer of properties to the Institutional Control Program. The following presentation is a status update on the work that was completed since last year and is currently under way.

I will now turn the presentation over to Mr. Jean LeClair. Thank you.

MR. LeCLAIR: Good morning, Mr. President and Members of the Commission. For the record, my name is Jean LeClair and I am the Director of the Uranium Mines and Mills Division.

As a reminder from what was said at previous hearings and meetings on the Beaverlodge, unlike some of the legacy mines in Northern Saskatchewan that were abandoned, the Beaverlodge site was decommissioned to the standards of the day from 1983 to 1985.

That being said, historical mining practices that took place during the operation of this mine were very different from those you would see in a modern uranium mine. Environmental protection standards have come a long way and many of the practices of handling mine waste would not be acceptable today.

The remedial work that Cameco is

performing during the current licence term is being done to improve on some of the original decommissioning work to ensure the long-term risks have been addressed and managed such that minimal efforts will be required to manage the sites under the provincial Institutional Control Program.

I would also like to assure the Commission that the risks of a tailings dam failure such as the one that occurred at the Mount Polley mine in British Columbia on August 4, 2014 does not exist at the Beaverlodge site. There are no dams on the Beaverlodge site as tailings were deposited into natural water bodies during operation.

I will now ask Charles Moreau to continue with the CNSC staff's presentation.

MR. MOREAU: Good morning, Mr. President and Commission Members. My name is Charles Moreau. I am the Project Officer for the decommissioning of the Beaverlodge mill and mine site.

I will begin my presentation by providing a site overview that includes a brief history of the file. I will also provide a status update for the activities completed at the site since 2014.

Jean LeClair will then present the section on the Institutional Control Program and Mr. Newland will present the staff conclusions.

I will start with the site overview.

As shown in the map on the left-hand side of the slide, the decommissioned Beaverlodge mine and mill site is located in the northwest corner of Saskatchewan and approximately 8 kilometres from Uranium City and approximately 50 kilometres south of the Northwest Territories boundary.

In the map on the right, the Beaverlodge licensed areas are outlined in red. Historical mining activities in these areas were conducted within two watersheds, the Ace Creek Watershed shown in light blue and the Fulton Creek Watershed shown in dark blue. Both these watersheds feed into Beaverlodge Lake.

There are five main licensed areas, including the Hab, the Dubyna, the Bolger/Verna, Lower Ace Creek and the Tailings Management Area. There are also three smaller licensed areas, the Eagle and two Martin Lake areas which have a relatively small footprint.

Each of these areas is a compilation of a number of individual properties. There is a total of 65 individual properties that make up these licensed areas.

Eldorado Nuclear Limited, a federal Crown corporation, operated the site from 1952 to 1982. During the early operation, comprehensive environmental protection regulations did not exist. As an example, the site operated without an effluent treatment process for

approximately 25 years.

Decommissioning was completed in 1985 following the plan approved by the provincial and federal regulatory bodies. The approval noted that the site was expected to recover naturally in the long term. Since 1985, the site has been in a state of monitoring and maintenance.

In 1988, Eldorado Nuclear Limited and the Saskatchewan Mining and Development Corporation, a provincial Crown corporation, merged to form Cameco. As a result of this merger, Cameco was assigned the responsibility of maintaining and monitoring the site, and Canada Eldor Inc., part of the federal Crown corporation Canada Development Investment Corporation, was to provide the funding for all of the site activities.

With Cameco's current 10-year licence, a plan has been developed to transfer the site back to the province through Saskatchewan Institutional Control Program.

In April 2013, the Beaverlodge Remediation Plan was presented to the Commission. Over 20 supporting studies were completed which have contributed to the development of the path forward, which concluded that the licensee identified reasonable options to support the natural recovery of the site.

The remedial options that were selected were considered to be good engineering practices and are expected to result in localized improvement in water quality. However, due to the legacy mining impact and the size of Beaverlodge Lake, there were no practical remedial options that would be able to meaningfully accelerate the natural recovery of Beaverlodge Lake.

In May 2013, the Commission accepted the path forward and issued Cameco a 10-year licence to proceed with the remedial work and continued management of the properties.

In 2014, CNSC staff provided, at the Commission's request, a list of performance objectives, performance indicators and the proposed timeline for the transfer of properties to the Institutional Control Program.

The current presentation will focus on the progress done since 2014 on the four remedial actions that were discussed in last year's presentation.

As described in last year's presentation, Cameco implemented and assessed four main remedial actions, including: the Bolger/Verna stream diversion; plugging boreholes; replacing caps on vertical mine openings; and assessing the need of covering accessible waste rock and tailings areas having elevated gamma levels.

The following slide will provide a brief status update on each of the options.

In addition, CNSC staff will present an update on the surface subsidence that occurred in the Lower Ace Creek area.

The first action I will discuss is the stream diversion at the Bolger/Verna area.

The purpose of this stream diversion was to re-establish the flow path between Zora and Verna Lakes to minimize contact with the waste rock pile.

In 2014, CNSC staff reviewed and accepted the detailed design of the stream diversion. The 2014 activities focused on physical and chemical characterization of the waste rock pile with a start on the waste rock removal.

As of mid-September 2015, Cameco reported that the entire length of the proposed channel was connected and water was flowing through. Flows within the channel are stable and were established to be the same entering and exiting the channel.

Excavation work within the channel is mostly complete, with some additional work expected like adjusting the side slopes and placing rocks in the channel to prevent erosion. Moving forward, CNSC staff will verify the status of the stream during the next compliance

inspection.

The second action is plugging boreholes. On the picture here, the location of the boreholes is indicated by the pipe section or the casing. All boreholes on the site are to be plugged to prevent potential for groundwater outflow to the surface.

Since 2013, all identified exploration boreholes on the Beaverlodge site had been sealed. Cameco also committed to seal any additional boreholes found on the site during the completion of the remedial work.

During the summer of 2015, Cameco located some additional boreholes and will seal them by the end of this year. These boreholes were not flowing but will be sealed as a preventative measure. CNSC staff will continue to verify during compliance inspections that all boreholes are sealed.

The third action is to replace the caps on vertical mine openings. This includes old shafts and ventilation raises.

The current concrete caps on the vertical mine opening will be covered with new engineering caps with established designs to ensure long-term safety of the site. All caps on vertical mine openings are scheduled to be covered by the end of 2018.

During the summer of 2015, the conditions

of the existing shaft caps were assessed by Cameco in preparation to install steel covers over the existing structures. CNSC staff also observed the condition of the caps during the June 2015 inspection and verified that there were no signs of significant deterioration.

Moving forward, CNSC staff will review the proposed shaft cap design and monitor their installation through compliance inspections.

The fourth and last action was to assess the need of covering accessible waste rock and tailings areas having elevated gamma levels.

Cameco performed a sitewide gamma scan in September 2014. CNSC staff independently verified the result of the gamma survey in June 2015.

Working with Uranium City residents, Cameco also conducted a land use survey to better know the time spent on Beaverlodge properties by Uranium City residents.

After review, CNSC staff concluded that from a risk perspective the gamma radiation level for members of the public on the Beaverlodge property are acceptable and predicted cumulative doses are below the public dose of 1 mSv per year.

In conclusion, CNSC staff do not require any further remedial actions to reduce gamma exposure.

In addition to the remedial actions, CNSC staff would also like to provide a brief update on the surface subsidence which occurred in the lower Ace Creek area.

In October 2013, Cameco reported a subsidence of a near surface crown pillar. A surface crown pillar is the rock mass situated above the uppermost drift in a mine which serves to ensure the stability of the mine working on the surface.

The subsidence was backfilled and access was restricted using temporary metal fences and signage and Uranium City residents were notified.

During the June 2015 annual inspection, CNSC staff noted that the temporary metal fence and signage were still in place and that the risk in the area was low.

Cameco completed a geotechnical and geophysical evaluation of the area to determine the extent of the voids, the crown pillar and the overburden thickness. Cameco is now studying the different remediation options and will submit a remediation plan once a remediation option will be selected.

CNSC staff will review the final remediation plan and verify its implementation during future compliance inspections. CNSC staff reviewed the actions taken to date and found them to be acceptable.

I will now pass the presentation to Jean LeClair.

MR. LeCLAIR: The Institutional Control Program is legislated and managed by the Province of Saskatchewan and designed for the long-term monitoring and maintenance of decommissioned mine sites.

The program consists of two primary components, the Institutional Control Registry and the Institutional Control Funds. The registry maintains a formal record of the transferred properties and manages the funding for any required monitoring and maintenance work. The funds which are provided in advance by the applicant pay for the long-term monitoring and maintenance, including any unforeseen events.

In order to transfer the properties at the Beaverlodge site into the Institutional Control Program, Cameco must first submit an application which will be reviewed by CNSC staff and the Province of Saskatchewan. If the application is accepted by both parties, CNSC staff will recommend that the Commission exempt the properties from CNSC licensing. After the properties are exempt from CNSC licensing, the Province of Saskatchewan will accept them into the Institutional Control Program.

In 2009, five of the Beaverlodge properties were transferred into the Institutional Control

Program following this process.

As there are 65 individual properties, this simplified chart, which was first presented to the Commission in 2014, groups the properties into areas to better illustrate the timeline for when the applications to transfer the site are expected.

In 2015, Cameco plans to request that the Commission exempt 15 of the 65 properties from CNSC licensing. Appendix A of CNSC staff's CMD 15-M41 lists all 65 properties. The 15 properties that are targeted for transfer to Institutional Control Program are highlighted in yellow.

In 2015, these properties were undergoing some final cleanup and verification activities. The properties represent the lower risk site, being more stable and having no significant hazards. For example, they do not contain any uranium tailings which might pose a greater risk for radiological exposures or downstream impacts. Cameco continues to keep community members informed of their plans going forward.

CNSC staff and the provincial representatives will review the application once received and verify that the performance objectives are satisfied prior to recommending to the Commission that the properties be exempted from CNSC licensing.

I will now pass the presentation over to Dave Newland for concluding remarks.

DR. NEWLAND: Cameco has made acceptable progress by completing all scheduled activities to date and continues to engage local residents on the status of the site.

CNSC staff conclude that Cameco's plan for completing the remedial work, verifying its effectiveness and transferring properties into institutional control is acceptable.

In addition, CNSC staff will verify that the properties are safe, secure, stable and improving prior to recommending that the Commission exempt them from CNSC licensing.

Thank you, and that concludes staff's presentation. We are available to answer any questions that you may have. Thank you.

THE PRESIDENT: Thank you.

Before getting to the question session, I would like to know whether Cameco has any comments. Mr. Mooney...?

MR. NAGY: Yes, we do, President Binder.

Good morning, Dr. Binder and Members of the Commission. For the record, my name is Kevin Nagy, Director of Compliance and Licensing for Cameco's

Saskatchewan Operations.

With me this morning is Liam Mooney, our Vice President of Safety, Health, Environment Quality and Regulatory Relations, and Michael Webster, our Reclamation Coordinator who directed overseas programs related to the decommissioning properties for Cameco.

Decommissioning of Beaverlodge was completed in 1985 and the properties were left in a physically stable and safe condition. It has been almost 30 years since the work to decommission the Beaverlodge mine and mill and its outlined mine properties was completed. Cameco has been a committed and capable manager of the decommissioned Beaverlodge property since 1988, conducting environmental monitoring and periodic maintenance to ensure that Beaverlodge remains safe, secure and stable.

As staff detailed in their report, Cameco continues to implement and monitor the additional remedial actions identified in our approved path forward plan. These remedial actions are expected to support the natural recovery of the decommissioned properties as well as to ensure their long term safety and security.

Since we were last in front of the Commission we have substantially completed construction work on the Bolger/Verna stream diversion project. The

original flow path of Zora Creek has been re-established and will be configured to ensure that it remains safe, secure and stable over the long term.

Further, we also submitted a third party analysis of our 2014 gamma survey of the disturbed areas in the decommissioned Beaverlodge properties. The results of this work reaffirmed that the radiological risk posed to the public by the decommissioned properties are as low as reasonably achievable. As a result, no additional remedial measures are needed in order to meet the public dose criteria on the decommissioned properties.

In accordance with our schedule, we have made application for 15 of the decommissioned properties to be exempted from further licensing requirements and be accepted into the Province of Saskatchewan's institutional control program. Detailed inspections of these properties were completed in 2015. Remaining debris was disposed of and, as a precautionary measure any identified drill holes on these properties will be sealed prior to their transfer into institutional control.

Based on our meetings with residents of Uranium City and the Environment Quality Committee who are targeted northern stakeholders, we believe that the path forward to having these properties accepted into the Institutional Control Program is supported. Through site

visits they see that the work being done to remediate and monitor the decommissioned Beaverlodge properties ensures that the health and safety of the public and the environment remains protected.

In response to the subsided crown pillar in the Lower Ace Creek area, Cameco engaged third party experts to conduct geotechnical assessment of the crown pillar stability and identify potential associated safety risks on all the historic Beaverlodge mining areas. This study concluded that the other crown pillars on the decommissioned properties were at low risk of failure and the recommendation made was continued monitoring.

Five remedial options were identified to address the long term safety and stability of the subsided crown pillar at Lower Ace Creek. Following consultation with the regulators and our targeted northern stakeholders, Cameco will implement the selected option as part of our path forward plan. In the interim, the risk posed to the public in the Lower Ace Creek area remains low. The community members are aware and both fencing and signage are in place to restrict access. Through our Public Information Program we will continue to update our targeted northern stakeholders on the conditions in that area.

Looking forward, we will continue to implement the approved path forward plan and monitor the

effectiveness of our additional remedial actions.

Thank you, and we will now be available to answer questions.

THE PRESIDENT: Okay. Thank you.

So let's start the question session with Monsieur Harvey.

MEMBRE HARVEY : Merci, M. President.

My first question is addressed to Mr. Cunningham of the Ministry of Economy, Minerals.

I would like to hear about your experience with that program, the Institutional Control Program since the beginning; the nature of your experience, the number of transfers, nature of monitoring and have you had any surprises about things like that?

MR. CUNNINGHAM: Okay. It's Keith Cunningham from the Ministry of the Economy, for the record.

Certainly, when we moved the first set of property, Beaverlodge properties into the Institutional Control Program, it was a very cooperative process both with the CNSC, the Ministry of the Environment and our ministry and we thought it worked quite well.

We have now had the sites in the

program for approximately six years and we have gone back and done the five year inspection. We didn't find any surprises, as you note. We thought that the sites really were performing as expected. And so far, you know, the program is also working as expected and we are working forward both with the CNSC, stakeholders and the Ministry of the Environment to do a review of the *Act* and the program which we are actually starting next week.

So you know, we are looking forward to doing that and basically how the program has worked so far.

MEMBER HARVEY: We have seen on the presentation a schedule for transfer of any property and how long will it take that schedule, I mean, from when you did the -- Cameco has to transfer such property and then how long will it take before the completion of all the process?

MR. CUNNINGHAM: For the first set that we brought into the program it was about a six month process from when the sites were ready and they went through and we did the CNSC and the Ministry of Environment inspections and they were sort of at an acceptable level.

So the process of the paperwork for

getting all the CNSC license exemption, the Ministry of Environment, their release and moving it into setting up surface lease was terminated and we moved to a miscellaneous use permit and we also set up Crown reserves.

So that process took about six months. We would foresee it being about the same for this next set of properties.

MEMBER HARVEY: Well, it's not a surprise for you. I suppose you are following the process, well the current process. So it's not a surprise when the requests come to you, comes to the --

MR. CUNNINGHAM: No, we are -- yeah. No, we have been aware of, you know, Cameco's desire to bring these properties in and have been participating sort of in the discussions on what's going to be required for the properties so far.

MEMBER HARVEY: Okay, thank you.

THE PRESIDENT: Just to piggyback on this, you know, we always hear intervenors in many projects -- not only that. We have heard yesterday on Gunnar, et cetera.

It would be really nice if we could see some photos of those properties because we have

always argued that Saskatchewan will take the properties under institutional control only when they believe there is really no longer any safety issues; radiation issues and maybe bring it back to almost the way nature meant it to be at the beginning. And nothing like photos to show what do they look like now after five years under institutional control. It would be nice to see what the properties look like.

MR. CUNNINGHAM: We do have -- when we went through and did the five year inspections we do have photos and those inspection reports are available. So we could certainly provide those.

THE PRESIDENT: And I think for future really you know, staff, you should put some of this material so we can actually see it.

Thank you.

DR. NEWLAND: Agreed.

THE PRESIDENT: Thank you.

Mr. Tolgyesi...?

MEMBRE TOLGYESI : Merci, M. le Président.

According to the schedule about 15 -- you expect that 15 of 65 sites will be transferred to institutional control in 2015 or so.

But you are saying the funds will be

provided by upfront by applicant. How you will establish the value of these funds? It is a kind of upfront money? Is it the present value of future expenses or it's a bulk figure or how you will establish that because there could be some improvisable things which could happen? Because you are saying that there is long term monitoring and maintenance and there is also separate funding for any unforeseen events.

In the case if there is -- you know what's happened. There is some subsidence in Lower Creek area. If it happens when these areas will be transferred have you established the value of these funds?

MR. CUNNINGHAM: We established the Monitoring and Maintenance Funds based on the monitoring schedule and the maintenance is typically estimated based on any work that we would forecast to be done. So that's like shaft, cap replacement and/or added replacement.

In the case of subsidence if, you know, there was a forecasted subsidence, I don’t know if the CNSC or the Ministry of Environment would actually sign off on the site. So if subsidence occurs at one of the sites that is not scheduled and

it's not foreseen, one of the things that we would be looking at is doing a causal analysis and going to the Unforeseen Events Funds for that funding or we would be looking back to the financial assurance that we have applied for a major failure event on the site to pay for that repair.

MR. LeCLAIR: Mr. President, if I could just ask Mr. Cunningham. He mentioned Unforeseen Events Fund.

Could you perhaps just take a couple of minutes to explain that fund, because I am not sure it was very clear? Perhaps if you could just add what the Unforeseen Events Fund is and how it's calculated?

MR. CUNNINGHAM: Sure. The Unforeseen Events Fund is basically calculated as a percentage of the Monitoring and Maintenance Fund and it's -- a deposit into that Unforeseen Events Fund, it is a type of insurance fund, if you will. But you would put in for a Monitoring and Maintenance Fund value if you have got no engineered structures on site. Your deposit into the Unforeseen Events Fund is 10 percent of that Monitoring and Maintenance value. And if you have an engineered structure on site it would be 20 percent of that Monitoring and Maintenance Fund value.

And what it's designed to do is just

to build some funding over time to be able to cover the financial assurance and it's for all sites. It is not -- the Unforeseen Events Fund is basically managed in whole and it can be applied to any of the sites in the program, whereas Monitoring and Maintenance Funds are site-specific.

But the Unforeseen Events Fund is, you know, a type of a financial assurance, a type of insurance and it is basically applied as a percentage of your Monitoring and Maintenance cost in order to build a value.

THE PRESIDENT: So let me ask. You now have historical experience with institutional control, right? It's not only for this particular site. I am talking about from the beginning Saskatchewan has been managing this program now for many, many years.

So did -- how many -- how often do you have tap into the fund to go and fix or verify or something goes wrong that you have to actually use the fund? So what's the --

MR. CUNNINGHAM: So far we -- so far we have gone into the Monitoring and Maintenance Fund for the Beaverlodge properties and for our Contact Lake properties for the five year inspection, the five

year monitoring. We have not had to go into any other funding into the Unforeseen Events Fund at all.

THE PRESIDENT: Thank you.

Mr. Tolgyesi...?

MEMBER TOLGYESI: I will come back a little bit to this subsidence here. As of present there are 12 crown pillars identified, of which eight are at Lower Ace Creek. Is this the final number or some additional pillars may be discovered?

Because you did an evaluation, so I don't know. This is an old site. So many times on the old sites you don't have detailed plans. So you don't know exactly how far the drift was or if it's an opening, a mining opening other than a drift. So how confident you are that all those potential crown pillars or crown pillars were mapped?

MR. NAGY: Kevin Nagy, for the record.

The work that we had done by our third party consultant, the geotechnical review, they undertook a comprehensive review of past mining records from the Eldorado operations. Through that they identified six of the main mining areas and identified the crown pillars associated with those. So those included in the Lower Ace area the main Beaverlodge mine and then the mine workings off the

Fay, Verna and Ace shafts and they also looked at the historical mining areas at Dobyna, the Hab area and as well the Martin Lake at it.

Of that review they determined that it was only the crown pillar in the area of Lower Ace Creek that posed a potential risk for further subsidence. The risks posed by the crown pillars in the other mining areas were low and that was why the recommendation made was just to continue to monitor those.

I believe the recommendation was on a five year basis. That said we do inspect those properties annually. So they are well inspected, for sure.

Following up on Lower Ace Creek, on their initial findings they did do an intensive field program using ground-penetrating radar. So they did identify any voids below the surface and the mine workings and the distance to the surface. Actually, it also included a drilling program. I believe they put down three drill holes at Lower Ace Creek as well.

So I would say that we are fairly confident that the crown pillars have been identified and, I think, well reviewed by our third party consultant in this manner. And we do have some

selected remedial options for the Lower Ace Creek area and we will be selecting and implementing that as part of our path forward plan.

As I mentioned in my remarks, the risk to the public remains low. They know that there is a concern with that area. The public is well informed and we do have fencing and signage erected to restrict access.

MEMBER TOLGYESI: And my last one. This is on the same subject, is that are there some specific considerations prior to transferring these sites, for instance how they should be secured; to what extent? Is fencing enough or, you know, because of what you are doing. You were fencing. Is there some additional material which was required to build up some additional subsidence?

So are there some specific considerations prior to transferring it?

MR. LeCLAIR: So every property we look at what are the hazards that may continue to exist, what actions were taken to ensure that they are safe. So if we look at situations -- for example if we take the shafts, ensuring that the caps are secure, that they are solid, that they can't be easily removed so someone could accidentally or intentionally enter

it.

So each site, depending on what the actual risk of the hazard is, we will look at it, look at what actions have been taken to ensure that they are safe in the long term. Part of that, of course, it's important that we -- engagement with the communities is so important which is why we always engage the communities to understand what they are doing, what they are doing on the properties, how the properties are being used, how easy are they to access? These are all important considerations that are taken into account.

But, certainly, as I mentioned, every site we look at radiological -- any radiological risks, any conventional risks and any risks from an environmental protection point of view to ensure they are well understood, that they are managed and that the sites remain safe and protective of the environment in the long term.

THE PRESIDENT: Just so I understand, you will -- Saskatchewan will not accept a fenced area, would they? I mean would you take an area that still requires fencing that will by definition, if I understand correctly, will not be eligible for institutional control? Is that not right?

MR.LeCLAIR: I'll ask --

THE PRESIDENT: If I'm Saskatchewan why would I take a property that I have to worry about fencing and keeping people out of?

MR.LeCLAIR: I won't speak on the Province's behalf. I'll let them.

THE PRESIDENT: No, speak on CNSC. Why would we give it to them?

MR. LeCLAIR: So if the area is fenced and there is a method by which to ensure that the fence is intact and that the fence can be repaired in the long run to ensure that it's intact --

THE PRESIDENT: But by definition you put a fence because there is some contamination and radiation and that means by definition monitoring, doesn't it?

MR. LeCLAIR: So I think it's important to say that if the sites did not need any monitoring or maintenance in the long run, then there would be no monitoring and maintenance. So the reason for maintenance means something needs to be maintained and that could include a fence.

I can't speak to -- we haven't got any cases right now where there is a fence that's going to needed to be maintained in the long run but certainly

it's not -- I don't believe it is a situation where we see there would be no monitoring and no maintenance required; none.

So some things may need to be maintained. For instance, a cap --

THE PRESIDENT: The question is maintained by whom?

MR.LeCLAIR: By the --

THE PRESIDENT: If there is a fence around a property, I would suggest that's still CNSC's responsibility before you transfer it to Saskatchewan.

Saskatchewan, you have a view about this?

MR. NAGY: President Binder, if I might, it's Kevin Nagy with Cameco, for the record.

Just to clarify, the fence that's at the Lower Creek area right now is an interim measure just meant to restrict access. We do have a number of long term options recommended by our consultant for the long term remediation of that area and that will ensure that it's safe, secure and stable into the long term and into an Institutional Control Program. It's not Cameco's intent for that fence to be the primary control once the property goes into institutional control.

THE PRESIDENT: Mr. Jammal...?

MR. JAMMAL: Thank you, Mr. President.

It's Ramzi Jammal, for the record.

Just beyond the fence debate here. It is the final exemption recommendations to the Commission. So when staff comes before you, as you stated, we make sure that all of the licensed activities or requirements under the CNSC are being met and then the final transfer is done to the institutional control.

So you are correct. So, if there are requirements that require regulatory oversight by the CNSC, we will not be before the Commission requesting exemption or transfer to the institutional control.

So the end point is, it must meet the exemption requirement of the CNSC before any application is provided to the Commission for consideration of exemption, and transfer to the ICP program.

THE PRESIDENT: Thank you.

Dr. McEwen...?

MEMBER McWAN: Thank you, Mr. President.

There was no mention of animal populations and animal monitoring. Is that needed for

an area such as this and would it be a short term or a long term plan that will be continued?

MR. LeCLAIR: The monitoring of the site and environmental protection includes the environment so it would include animals, fish, water; soils. It's all part of the reviews. In fact, it was an extensive part of the reviews that were done prior to the licence being issued -- that the licence that was renewed a few years ago.

So clearly animals, plants, fish are all important as well as ensuring, for instance. that the harvesting of those foods can be done. That was part of the previous studies. There was an extensive country foods study that was done for the residents of the area to ensure that they could continue to consume animals, fish within the area, berries are safe to eat.

So that's certainly all part of the -- of the program and part of the review.

THE PRESIDENT: Dr. Thompson?

DR. THOMPSON: Patsy Thompson, for the record.

Perhaps to clarify, the actual regulatory program, the ongoing program, really is focused on the aquatic environment. There has been studies to determine the level of contamination in country foods and determine

whether they're safe to eat, but it was sort of a one-off type of study to get a baseline.

But in terms of ongoing regulatory program, the regulatory program is focused on the aquatic environment because that's where the impacts were.

MEMBER McEWAN: So it might just have been nice to have a paragraph sort of saying that it is still part of the process, particularly for Commissioners coming in halfway through the process.

Just at this stage, just one more comment. Again, it might have been nice -- I would have liked to have seen, perhaps as an appendix, just some of the gamma survey data to just understand the extent of it. Again, I think it would have added just a little completeness to this.

Thanks.

THE PRESIDENT: Thank you.

Ms Velshi?

MEMBER VELSHI: Thank you, Mr. President.

So you know, given this is on the -- the heels or tail of the Gunnar presentation, so Gunnar Lorado, Beaverlodge, are there others that are being remediated or have just finished their decommissioning remediation?

MR. LeCLAIR: So for speaking of uranium mines and mills specifically in Saskatchewan, so we're

speaking today of Beaverlodge. Yesterday, we heard about Gunnar Lorado. In 2016, we'll be coming back to you with a mid-term update on the Cluff Lake uranium mine and mill that was -- is actually the most recently decommissioning -- decommissioned uranium mine and mill that's located on the northwest side of the province of Saskatchewan, so it would be south of Lake Athabasca.

MEMBER VELSHI: And so would the performance objectives of each of these four be the same or are they site specific?

MR. LeCLAIR: They would be site specific.

MEMBER VELSHI: And is there an opportunity of sharing of learnings amongst the four -- I guess you would be the common point in that -- with the licensees or the applicants?

MR. LeCLAIR: Jean LeClair, for the record.

Yes, certainly it's always -- lessons learned are always applied, applied both in the operation of the site, so again, we've mentioned previously some of the operations that were done at Gunnar Lorado and that were done at Beaverlodge would not be done today.

There's things that are done at the mines today -- that were done at Cluff Lake that aren't done at the mines today. And similarly, all the decommissioning

experience that's obtained, I should mention that it's not just the operating uranium mines and mills. We also work with the waste and decommissioning group that's responsible for the historic sites like Elliott Lake, for instance.

So we look across all these to ensure that we learn from them and use that experience going forward.

MEMBER VELSHI: Thank you.

And a quick question for Cameco. Has your budget -- have you stayed within your budget given what you had expected the scope of work to be to date?

MR. NAGY: Kevin Nagy, for the record.

It's not often I have the opportunity to say this, but I think we are on schedule and I think we have been on budget.

MEMBER VELSHI: Thank you. Congratulations.

THE PRESIDENT: Because it's not your money. It's Eldor that are providing the funds here.

--- Laughter / Rires

THE PRESIDENT: So be on a serious note, Eldor's provided sufficient funds to do the job. Is that correct?

MR. NAGY: Kevin Nagy, for the record.

That is very correct.

THE PRESIDENT: So Ms Velshi raised an

interesting point.

Does it make sense -- this is for staff. Does it make sense for you to try to bundle all the mines, both now going remediation and some of the legacy mine and come up with -- you know, with a presentation here instead of doing it together with some of the -- you know, uranium just having, you know, a one session dealing with all of them so we can compare notes and see where we are on the whole bundle? Does it make sense?

DR. NEWLAND: It does, indeed, make sense, and we'll plan for that next year.

THE PRESIDENT: Great. Thank you.

MEMBER HARVEY: Merci, monsieur le président.

The first item on the list of the remediation works have been started or realized is the stream diversion so that the re-establishment of the flow between the two lakes. Could you just elaborate on that?

I suppose the flow has been cut by some deposit, but where was the water going if not going to the Verna Lake?

MR. NAGY: Kevin Nagy, for the record. Sorry.

MEMBER HARVEY: Okay. You can go.

MR. NAGY: Sorry. Kevin Nagy, for the

record. Sorry about that.

During the mining in that -- at that time, waste rock was placed kind of along the lower area where the previous flow of the creek had been between Zora and Verna Lake, so then, over the years, the flow was primarily through the waste rock. So that was when we were looking at potential remedial options.

We saw an opportunity for localized improvement of water quality in Verna Lake by removing a portion of the waste rock, relocating that to Bolger Pit -- that's where we're putting that waste rock -- and then re-establishing that flow path that had been previously covered by the waste rock.

MEMBER HARVEY: Okay. You're talking about the quality, the use of that and some expectation to what are you going to get for the quality after the works?

MR. NAGY: Kevin Nagy, for the record.

The modeling that we did do when we were assessing the remedial options did identify localized improvements in water quality in Verna Lake. As I mentioned, we're nearing completion of construction. We still do have some work to do, so we're not expecting immediately to see an improvement in water quality in Verna Lake, but it is something we will continue to monitor and we do provide that information to staff on an annual basis.

MEMBER HARVEY: Could the water quality of that lake be a problem to postpone the transfer of the property to the control of Saskatchewan?

MR. NAGY: Kevin Nagy, for the record.

It is -- water quality in that lake, the model predictions was one of the performance indicators that we did put forward with our path forward plan. So if the water quality isn't performing as expected as per the Beaverlodge management framework, we would go back and assess the residual risk associated with that. And if it wasn't acceptable, we would look if there was any further options we could undertake to improve that local water quality.

MEMBER HARVEY: Thank you.

THE PRESIDENT: So for staff, again, this is a suggestion.

So I like the map on slide 4. It shows all the properties. And then I move to slide 8, and Zora -- I have no idea where Zora -- Zora doesn't appear on that slide 4. So again, I'm struck by trying to understand the flow, and every time you've got a big project like rediverting, you'll have to remind us again what was the original intention, what's the performance, a little bit more specs.

I understand this is an update, but you

can't assume we'll remember what the original deal was. So you've got to give us more of a reminder what was your objective, what's the performance and why this is important kind of a project.

So this is a suggestion for the future.

Monsieur Tolgyesi.

MEMBER TOLGYESI: I am coming back to this Zola-Verna Lake. What you were saying that the Verna Lake water quality improved, now does it mean that the waste rock -- you know, you were diverting the stream. Does it mean that the waste rock was contaminated and that there was some leeching, or it's -- this improvement is due to other considerations?

MR. NAGY: Kevin Nagy, for the record.

I think first I'd like to say that the studies we conducted and the monitoring that we continue to perform and as well the risk assessment that had been done on all the decommissioned properties as part of our path forward plan did identify that the residual risk on all the decommissioned properties, including the Bolger, Verna, and Verna Lake, were low.

The studies that we did do indicated that the waste rock was potentially contributing to the water quality and impacting the water quality in Verna Lake. There perhaps was some mineralization associated with the

waste rock, and that's why the project we're undertaking is expected to have some localized water quality improvements in Verna Lake.

And we will continue to monitor and provide that information to staff.

MEMBER TOLGYESI: So it was not just rerouting the stream, but it was some other work which was done also to prevent any -- any contamination, I expect.

MR. NAGY: Kevin Nagy, for the record.

I think we're re-establishing the existing stream is perhaps a better term, and we're moving the waste rock from along -- along that flow path, is what we're doing.

MEMBER TOLGYESI: My last is regarding bore holes.

You still discover some bore holes which were unidentified. There were some discovered in 2015 that were not flowing. Although they are not flowing, you blocked them. You sealed them all?

MR. NAGY: Kevin Nagy, for the record.

As part of our path forward plan, we did commit to seal flowing bore holes and we also have been sealing non-flowing bore holes as a precautionary measure. The ones we identified in 2014 had been sealed as a precautionary measure.

We identified -- the bore holes that were identified in 2015 weren't found to be flowing, and they are located in remote or harder areas to get into, so at present, they haven't been sealed and we're currently assessing our options to do that in a safe manner -- safe and effective manner.

THE PRESIDENT: Thank you.

Dr. McEwan?

MEMBER McEWAN: Thank you.

If I look at slide 5, it's a comparison of the before and after. Were all the buildings removed at the time of the initial decommissioning or was there anything left? It certainly looks as if there are sort of less in the 2009 picture.

Any risk of -- was there any contamination, any difficulties associated with cleaning that up?

MR. NAGY: Kevin Nagy, for the record.

At the time of decommissioning, the buildings were removed and placed in the waste rock pile. The sites were left in a physically safe and stable condition, and there was low radiological risk to the public at the time of decommissioning.

The gamma survey that we recently completed as well as the ALARA assessment did indicate

that, on all the decommissioned properties, no further actions are or were necessary to comply with the public dose criteria.

MEMBER McEWAN: Thank you.

THE PRESIDENT: Thank you.

Ms Velshi?

MEMBER VELSHI: A question for Cameco. If we turn to slide number 15, this is the time line for transfer, remind me why it goes on till 2023, especially given your gamma surveys and there's no requirement for covering?

What's the big chunk of work that's needed for the tailings management area and some of those other areas?

MR. NAGY: Kevin Nagy, for the record.

For the most part, that will be the ongoing environmental monitoring that we're conducting on the properties and downstream and to ensure that natural recovery is performing as expected and we're meeting that performance indicator of the properties being safe, secure, stable over the long term.

MEMBER VELSHI: So is it your modeling that then says that that's how long the monitoring needs to take place to get that confidence?

MR. NAGY: Kevin Nagy, for the record.

I think it's our belief that that time would be sufficient for the monitoring to establish the trends that would show that they're performing as expected or as per the modeling, yes.

MEMBER VELSHI: Thank you.

THE PRESIDENT: Okay. Thank you.

Monsieur Harvey? Monsieur Tolgyesi?

MEMBER TOLGYESI: A very short one.

Around these bore holes, are you doing some rehab work in affected areas around the previous flowing bore holes because there is some contamination? Are you doing something or do you expect that the nature will take over?

MR. NAGY: Kevin Nagy, for the record.

Again, the work we've done building the path forward plan and implementing these remedial actions show that the risks on the properties were low, and they remain that way. The flowing bore holes were localized.

I would note that we have seen some improvement in water quality immediately downstream. The Dabina(ph) Lake, I believe, we have seen marked improvement in water quality as a result of the actions flowing -- plugging those flowing bore holes.

THE PRESIDENT: Thank you.

Dr. McEwan?

MEMBER McEWAN: So if I look at the sort of natural recovery concept, we've really, with this site, got a 50-year or 30-year experiment in actual recovery before this process to sort of complete and speed it up. If you look at the data available at decommissioning and the data available now, would there be evidence that there really does occur some substantive natural recovery, or is there evidence that you really do have to intervene to make a difference quickly enough to facilitate that?

MR. NAGY: Kevin Nagy, for the record.

As we've said, the sites were decommissioned 30 years ago and were left in a physically safe and stable condition, and the expectation at that time was that the environment on the properties and downstream would naturally recover.

As part of our path forward plan, we did assess a wide range of potential remedial options, either on their own or in combination, and what we found using our modeling was that none of them did have a significant effect on speeding up the natural recovery, which is why we're focusing on more site-specific actions that are expected to have localized benefits and ensure the properties remain safe, secure and stable over the long term.

THE PRESIDENT: So for the next year,

since -- we're going to be monitoring this for a while, so for the next year it would be really nice to have -- again, I'm not looking for a brick, but maybe a table that says here's what we set out to show, the improvement, and here's the progress to where our performance goals in terms of water quality, air quality, all the stuff that they actually have the measures that CNSC staff presumably are checking compliance on.

Ms Velshi.

Okay. Any other questions?

So I have only one. We didn't talk a little bit about the outreach and the -- you know, the aboriginal communities living by.

I notice on page 4 that there was -- May 19th, 2015 there were public meeting held in Uranium City and Cameco organized and the Athabasca Environmental Quality Committee.

So I'm just interested in knowing how many people showed up, what was the nature of the discussion, is there a lot of interest in the community and are the community aware of what's going on.

MR. LeCLAIR: Jean LeClair, for the record.

I believe Sarah Eaton was in attendance at that meeting, and perhaps I can ask her if she could say

what she saw and what she heard.

MS EATON: Thanks very much, Jean. It's Sarah Eaton.

So the meeting was attended similarly, as most meetings in Uranium City, with local residents who were interested in participating. As we all know, it's a small community, particularly in sort of the winter months. But the EQC was present, and so I think they had approximately 12 to 15 members showed up.

We had a presentation, and then we went into a tour of the stream diversion, which was very well received by the EQC members. They like to be able to see that in person themselves.

THE PRESIDENT: So how did you get them to the site?

MS EATON: Cameco provided a charter aircraft that picks them up in sort of a nearby location and then we fly to the runway there in Uranium City.

THE PRESIDENT: So in your view, there's a full understanding of this project and the time lines and you haven't heard any sort of concerns being expressed.

MS EATON: It's my opinion since being on this file for approximately six years the people in Uranium City are well aware of the Beaverlodge site, its history and the challenges that it presents and that they're --

generally, that people are pleased with the progress forward. They understand that what can be done is limited, and that they're aware of what's being done and then, in general, that they are in agreement with what's happening.

THE PRESIDENT: So do you have -- Cameco, do you have any kind of stats about roughly how many people you're engaging -- engage local -- you know, local community people, how many people are participating in this project?

MR. MOONEY: It's Liam Mooney, for the record.

I might ask Mike Webster to give some numbers in that regard, but as Sarah Eaton outlined, it is a relatively small community, the Uranium City community, but we've been engaging them for many years and have formalized our target audience in our public information program. And that includes the people living in the vicinity of that facility as well as the engagement efforts with the environmental quality committee, which is a bit of a broader net being cast.

So as far as specific numbers, it varies. When the EQC is involved, they have a bit firmer membership. As far as the outreach with Uranium City, at times the effort has gone so far as to be door to door for the less than 100 residents in Uranium City to try and

communicate our plans and to invite people to consultation efforts.

THE PRESIDENT: So --

MR. WEBSTER: It's Mike Webster. Sorry.

THE PRESIDENT: Go ahead.

MR. WEBSTER: It's Mike Webster, for the record.

So typically, during public meetings, we get probably five to 10 local people show up for our public meetings. That's in a community of approximately 80 people.

We do engage with local workers for performing our water quality monitoring. The projects that we're doing like stream diversion project, we employ local contractors, probably five to eight local contractors for a project such as the stream diversion. Also, in the shaft cap replacement that we're planning in the upcoming years, again, that will be largely local contractors that will be performing that work.

When there's need for larger engagement activities such as the country food study or when we wanted to perform the land use study, we would actually go door to door and engage as much of the community as possible.

I know in the country food study we went door to door and engaged over 90 percent of the community.

THE PRESIDENT: Okay. Thank you.

Anybody else? Any last comment?

Okay. Thank you. Thank you very much. We will take now a 15-minute break and go to the next item on the agenda.

Thank you.

--- Upon recessing at 10:12 a.m. /
Suspension à 10 h 12
--- Upon resuming at 10:30 a.m. /
Reprise à 10 h 30

THE PRESIDENT: The next item is the annual regulatory oversight report on the use of nuclear substances in Canada 2014, as outlined in CMD 15-M27 and 15-M27.A.

I understand that we have a representative from Canadian Light Source joining us by teleconference.

Mr. Cubbon, can you hear me?

MR. CUBBON: Yes, I can, sir. Thank you very much.

THE PRESIDENT: Okay. Welcome.

I also understand that some representatives from TRIUMF are trying to connect with us. Are they online?

TRIUMF?

Well, let us know if they are joining us during the proceedings here.

So let's turn to our presentation from CNSC staff.

I understand, Mr. Moses, you'll make the presentation. Please, go ahead.

*__CMD 15-M27/15-M27.A__

Oral presentation by CNSC staff

M. MOSES : Merci, Monsieur le Président et membres de la Commission. Je m'appelle Colin Moses et je suis le directeur général responsable de la réglementation des substances nucléaires.

Je vous présente mes collègues ici avec moi aujourd'hui : Ms Kavita Murthy, Director of the Accelerators and Class II Facilities Division; Mr. Peter Fundarek, Director of Nuclear Substance and Radiation Device Licensing; Mr. Henry Rabski, Director of Operations Inspection; et M. Sylvain Faille, directeur des autorisations de transport et du soutien stratégique.

On est également joint par d'autres membres du personnel de la CCSN qui sont présents dans la salle en appui à l'équipe.

Nous vous présentons aujourd'hui le rapport annuel de surveillance réglementaire sur l'utilisation des substances nucléaires au Canada pour l'année 2014. Ce rapport constitue le sixième rapport produit jusqu'à maintenant par la CCSN, le précédent rapport vous ayant été présenté en novembre 2014.

Production of this regulatory oversight report continues to be an achievement for the Canadian Nuclear Safety Commission and a mark of good practice internationally. The CNSC continues to be the only nuclear regulator in the world to be producing such a comprehensive report on the regulatory oversight of the use of nuclear substances and equipment in industrial, medical, commercial and research and academic settings.

Following the presentation today, the report will be finalized and published on the CNSC external website.

You will see here an overview of the presentation: providing an overview of the CNSC's regulatory approach to regulating nuclear substances in Canada, and going on to present on the performance of each sector. We will conclude the presentation, highlighting our progress on certain key initiatives under way in 2015.

I will start with a brief introduction.

Pursuant to the CNSC's mandate for the

dissemination of objective regulatory information, and consistent with our commitment to transparency in our activities, the CNSC publishes a series of annual regulatory oversight reports covering all main sectors of our regulatory oversight.

You have already heard about the CNSC's regulation of nuclear power plants, uranium mines and mills, and uranium and nuclear substance processing. Today we will be discussing our regulation of nuclear substances in Canada.

The series of reports will conclude in December, when you will be presented a report outlining the CNSC's oversight of small research reactor facilities.

The uses of nuclear substances and nuclear technology in Canada are broad and diverse. For reporting purposes, we have structured the report to cover the four main sectors of applications of nuclear substances as follows: the Medical sector, covering the uses of nuclear substances and technology for both diagnostic and therapeutic purposes; the Academic and Research sector, including the use of nuclear substances or technology for research and teaching purposes; the Industrial sector, the use of nuclear substances or technology in fabrication and production facilities or as part of fieldwork and construction activities; and the Commercial sector, which

includes licensees that produce, process, store and/or distribute nuclear substances or offer other services for radiation devices.

Finally, the report addresses our oversight of the two Class IB high-energy research particle accelerator facilities -- the TRIUMF facility in Vancouver and the Canadian Light Source facility in Saskatoon -- that leverage nuclear technology for particle physics, biology and material research.

As illustrated on this slide, our oversight of the safe use of nuclear substances covers activities across all provinces and territories of Canada. This includes all major hospitals in Canada, most Canadian universities and research institutions, a wide variety of industrial manufacturing and production facilities and all locations that store, produce or service nuclear substances and devices.

In addition, our regulatory oversight extends to field uses of nuclear devices, and our compliance approach, which we will be outlining later, includes field inspections to ensure that nuclear devices are being used in a safe and secure manner across the entire country.

As of December 31, 2014, there were 2,415 active CNSC licences held by 1,702 distinct licensees. The

extent of activities in these areas remains relatively stable and, despite normal variations in individual businesses, the total number of licensees has remained stable over the past five years.

You will note, however, a small decrease in the number of individual licences in the last few years, primarily driven by two main factors.

Firstly, in the industrial sector there have been a number of consolidations of companies, which has led to a decrease in the number of CNSC licences.

In addition, in the medical and academic and research sectors, in the interest of minimizing administrative burden for our licensees, the CNSC has been moving forward with our initiative to consolidate licences wherever practical.

Pursuant to the *Nuclear Safety and Control Act*, doses are monitored for all workers involved in activities authorized by the Commission. In 2014, there were a total of 60,407 workers working in the fields covered by this report, roughly half of those working in the industrial sector, which is consistent with the relative distribution of our licences.

Of the total number of workers, 23,688 were designated as nuclear energy workers. Nuclear energy workers are those who, in the course of their business or

occupation in connection with a nuclear substance or nuclear facility, perform duties in circumstances which may result in receiving a dose of radiation greater than the 1 millisievert per year.

I will now turn the presentation over to Mr. Sylvain Faille to present an overview of the report and some of the improvements introduced in this year's report.

MR. FAILLE: Thank you. Sylvain Faille, for the record.

For this year, the report includes more detailed information on CNSC activities related to the regulatory oversight of these industry sectors.

With regards to events, the CNSC adopted the International Nuclear and Radiological Event Scale, or INES for short, for communicating the radiological risk significance of the reported events. Additional information on INES will be provided later in this presentation.

The inspection ratings for the security safety and control area have been included in this report.

Also new this year is a dedicated section on high-energy research particle accelerator facilities. In the past, information pertaining to these facilities was included as an appendix to the report.

Finally, the report was posted for public

consultation earlier this summer.

The CNSC regulates the nuclear industry in Canada through a comprehensive program of licensing, certification, compliance verification and enforcement. The safe use of nuclear substances in Canada is a reflection of the licensees' compliance with the *Nuclear Safety and Control Act*, as well as its associated regulations and specific conditions set out in CNSC licences.

The *Nuclear Safety and Control Act*, its regulations and the licences, require that licensees implement and maintain appropriate programs to ensure the safety of nuclear activities, minimize doses to workers and the public, and minimize consequences of events.

Licensees are always responsible for the safety of their operations and activities. For each nuclear industry sector described in this report, CNSC staff conducts inspections, assessments and reviews to evaluate each licensee's programs, processes and safety performance.

In 2014, CNSC staff conducted 1,453 inspections across the sectors. The inspections covered all applicable safety and control areas. A risk-informed decision-making process was used for planning and conducting our compliance activities, commensurate with the risk associated with the various uses of nuclear substances

within those sectors and facilities.

CNSC staff also verified compliance through desktop reviews of licensees' annual compliance reports, licence applications and licensees' program documents. Modifications are made on an ongoing basis in response to events and changes in licensees' performance.

CNSC staff requires licensees that failed to meet regulatory requirements to take corrective measures to address non-compliances found during inspections. All non-compliances are systematically tracked by CNSC staff to ensure licensees take satisfactory corrective measures to address them.

To ensure comprehensive regulatory oversight and reporting, compliance requirements have been categorized into a well-established set of 14 technical areas that have proven effective in evaluating licensees' safety performance. These are known as safety and control areas, or SCAs.

For the purpose of this report, safety performance in the four nuclear sectors is measured by examining the licensees' regulatory compliance in three selected SCAs: operating performance, radiation protection and security.

Because of their greater complexity, the two high-energy research particle accelerator facilities

are subjected to more frequent and more detailed CNSC compliance verification activities than other licensees covered in this report. Consequently, the safety performance of these two facilities is measured against all of the 14 SCAs using an approach consistent with reporting for other major CNSC-regulated facilities in Canada.

Stakeholder engagement in the form of outreach is integral to the CNSC's objectives. CNSC staff believes that an increased awareness and better understanding of regulatory requirements by licensees and other persons regulated by the CNSC leads to increased safety in the workplace.

Since 2009, the CNSC has offered a formal outreach program for licensees that uses nuclear substances. The presentations made by CNSC staff in discussions are meant to inform stakeholders on the upcoming and recent regulatory changes and provide education regarding the CNSC's expectations for licensing and compliance requirements.

In 2014, the CNSC continued to create more opportunities for licensees and other persons to interact with CNSC staff outside of the scope of inspections and licensing activities. The topics covered by the outreach program included: the new regulatory requirements, such as REGDOC-2.12.3, *Security of Nuclear Substances: Sealed*

Sources, and the proposed CNSC financial guarantee program; changes to the CNSC compliance program and inspection results from the previous years; information on the forthcoming amendments to the *Radiation Protection Regulations* and the *Packaging and Transport of Nuclear Substances Regulations*; and existing regulatory requirements, such as reporting and transport of nuclear substances.

Approximately 1 million packages are transported each year in Canada. The packaging and transport of nuclear substances is jointly regulated by Transport Canada and the Canadian Nuclear Safety Commission. Packages that are used for the transport of nuclear substances must comply with: the CNSC *Packaging and Transport of Nuclear Substances Regulations*; Transport Canada's *Transportation of Dangerous Goods Regulations* and the International Atomic Energy Agency's transport regulations.

The CNSC staff efforts related to licensing, certification and compliance verification represent close to 9,000 person-days, or approximately 40 full time staff equivalent.

Designated officers in the CNSC *Directorate of Nuclear Substance Regulation* made a total of 2,273 licensing and certification decisions in 2014, with

the majority of these being licensing decisions.

I will now turn the presentation over to Mr. Henry Rabski.

MR. RABSKI: Thank you. For the record, my name is Henry Rabski.

Throughout the following slides, I will be providing an overview of the safety performance of nuclear substance licensees for 2014.

For 2014, doses to workers remained very low and followed a constant trend when compared with previous years. Overall, more than 99.9 percent of all workers received doses below their applicable regulatory dose limits.

All four nuclear sectors continued to demonstrate good performance within the operating safety control area, with 88.4 percent of inspected licensees found to be in compliance.

Similarly, all four nuclear sectors continued to demonstrate good performance within the radiation protection safety control area, with 89.1 percent of inspected licensees found to be in compliance.

CNSC staff also verified the security as part of inspections performed, and are reporting the results for the first time this year in our report. For this safety control area, CNSC staff verified licensee

compliance against requirements described in REGDOC-2.12.3, *Security of Nuclear Substances: Sealed Sources*.

In 2014, adequate security provisions were in place for 94.8 percent of licensees who were inspected. All non-compliances were addressed.

In 2014, licensees also reported a total of 147 events to the CNSC involving nuclear substances, of which 141 were categorized by CNSC staff as "no safety significance" according to the International Nuclear and Radiological Event Scale, a scale used for rating events involving nuclear substances. More details on these ratings will be provided later in this presentation.

Overall doses received by nuclear energy workers remained low in 2014. While the regulatory dose limit is 50 millisieverts per year, the majority of workers received doses below 1 millisievert, which is the dose limit for members of the public. No nuclear energy worker exceeded the one- or the five-year dose limits of 50 millisieverts and 100 millisieverts, respectively.

The Commission should be aware that from 2010 to 2012, a representative sample of the workforce was taken to evaluate the dose to nuclear energy workers as part of the report on performance. Since 2013, the total number of workers is now being reported.

This slide demonstrates the distribution

of doses to workers in the nuclear sectors and facilities included in this report. As in previous years, the highest doses continued to be received within the industrial sector.

To address non-compliances, CNSC staff use a variety of enforcement actions. These range from notifications of non-compliance, up to requiring corrective actions through the issuance of inspectors' orders, as well as the imposition of administrative monetary penalties, or AMPs.

The nature of the enforcement action is based on the seriousness of the non-compliance, as well as case-specific circumstances. Depending on the severity of the problem, more than one enforcement action could be needed to deal with a specific non-compliance.

In 2014, the CNSC escalated compliance enforcement action in 19 instances for licensees in the medical, industrial, academic and research and commercial sectors. In 12 of those instances, CNSC staff issued orders which required licensees to take immediate corrective measures. Eleven of these orders were issued by inspectors and one was issued by a designated officer. In each case the licensee addressed all terms and conditions of the order and all orders issued in 2014 have been closed.

As well, CNSC designated officers issued seven AMPs. Five of these seven AMPs were issued following or in conjunction with orders, while two of the AMPs were issued to individuals. Three AMPs were reviewed by the Commission following a request for a review by the person named in the AMP. All seven AMPs issued in 2014 have been paid.

Events identified in the annual report have been ranked using the International Nuclear and Radiological Event Scale, INES, a tool for communicating the safety significance of nuclear and radiological events to the public. The INES scale allows the establishment of a proper perspective of an event's safety significance.

For the purposes of this report, the scale was applied to all events associated with the transport, storage and use of radioactive sources and nuclear substances reported by licensees within the four nuclear sectors covered under this report. The scale was also used to rate events that resulted in exposure to workers and members of the public as a result of events that occurred during the use of nuclear substances and devices.

To validate the CNSC's use of the scale for nuclear substance-related events, CNSC staff reviewed historical data in the IAEA INES database. The review confirmed that the CNSC's ranking and number of nuclear

substance-related events is consistent with other countries.

The use of the INES scale provides a consistent approach to reporting the safety significance of events. Under this scale, all events are classified on a scale that includes seven levels. Levels 1 to 3 are called incidents and Levels 4 to 7 are called accidents.

Examples of events that could be rated as Level 1 include exposure of a member of the public to an excess of the public dose limit or a loss or theft of a radiation device such as a portable nuclear gauge.

An example of an event that could be rated Level 2 could include exposure of a member of the public to a dose in excess of 10 mSv.

As previously mentioned, 147 events related to nuclear substances were reported to the CNSC in 2004 by licensees. Of the 147 events, 141 events were ranked below Level 1 or no safety significance.

The five Level 1 events have been further broken down in the following manner:

- Four events involved lost sealed sources or portable gauges containing low-risk sealed sources.

- The fifth Level 1 event involved the theft of two packages containing a total of approximately 40 gigabecquerels of technetium-99m, a radioisotope used

for medical imaging diagnostics, from a parked delivery vehicle. These packages presented a very low risk to workers, the public and the environment as technetium-99m has a half-life of only six hours and decays to background levels within three days.

Events where portable gauges and/or stolen packages have not been recovered continue to be tracked by CNSC staff.

The figure on the right side of this slide demonstrates that the Level 1 events reported in this report correspond to the INES criteria.

The Level 2 event occurred in March 2014. Twenty-four non-nuclear energy workers at a mine site in Fermont, Quebec were working in an area at the facility where two nuclear gauges were located. The gauges should have been locked with the source in the shielded position for the duration of the work but were inadvertently left in the open or unshielded position. As a result, these workers received effective doses of radiation ranging from 0 to 10.5 mSv. Ten of the workers were exposed to levels of radiation above the annual effective dose limit of 1 mSv for the members of the public.

Under the INES scale, this event ranked as Level 2, an incident, since the exposure of one of the workers exceeded 10 mSv. Such doses are well below the

regulatory dose limit for nuclear energy workers and would not be expected to result in adverse health effects to exposed persons.

CNSC staff reported this event at the August 21st, 2014 Commission public meeting. The licensee took appropriate corrective actions to prevent reoccurrence of this event, including revising its operational procedures and training programs. These corrective actions were reviewed by CNSC staff and found to be satisfactory. The CNSC review and investigation of this event were closed at the Commission public meeting.

I would now like to turn the presentation over to Mr. Fundarek.

MR. FUNDAREK: Mr. President and Members of the Commission, for the record my name is Peter Fundarek.

In this part of the presentation we will review the information for the performance in the medical, industrial and commercial sectors.

The first sector to be reviewed is the medical sector and involves the use of radioisotope labelled pharmaceuticals, nuclear substances in radiation devices and other prescribed equipment for the diagnosis and treatment of disease. It can also be used to monitor the efficacy of non-radiological treatments and this work

is conducted on either humans or animals but it does not include the use of radioactive material in animals for research purposes.

In the medical sector there were 536 licences issued in 2014, involving 9003 nuclear energy workers, which represent approximately 63 percent of all workers in this sector.

The specific subsectors reviewed include:

- diagnostic and therapeutic nuclear medicine, where nuclear substances are inhaled, ingested or injected into patients;

- radiotherapy, where radiation from nuclear substances, internal or external to the body, are used to treat disease; and

- veterinary nuclear medicine, where nuclear substances are used in a similar manner but in animals for the diagnosis and treatment of disease.

Based on the evaluation and verification of licensee performance, CNSC staff concluded that the safety performance in the medical sector remained stable in 2014.

Doses received by nuclear energy workers in this sector remained low, with the majority of workers receiving doses less than 1 mSv. No nuclear energy worker received a dose in excess of the annual regulatory limit.

Reviewing the operating performance and radiation protection safety control areas for the inspected licensees, 91.4 percent were found to be compliant with operating performance, 91.9 percent met all requirements for radiation protection safety, and 96.3 percent met all requirements for security.

Where necessary, licensees took appropriate corrective actions satisfactory to CNSC staff to address the non-compliances noted during these inspections.

No enforcement actions in the form of an order or an AMP were issued in 2014 for the medical sector.

However, as a result of one event and the findings from a 2014 inspection, one licensee was issued a Designated Officer Request under *General Nuclear Safety Control Regulations* subsection 12(2).

In 2015, an Administrative Monetary Penalty was issued against this licensee and details on these enforcement actions were posted on the CNSC's public website.

Overall, there was good performance in the medical sector.

Nuclear energy workers in the diagnostic and therapeutic nuclear medicine subsector continue to receive higher doses than workers in other medical

subsectors. This is the result of directly administering nuclear substances to patients and constantly working in environments where patients are in close proximity to health professionals. Note that the vast majority of these workers received less than 5 mSv.

The majority of nuclear energy workers in the other two subsectors recorded annual radiation exposures of less than 1 mSv.

As seen here, the performance in the radiation protection safety and control area has continued to show steady and marked improvement since 2010. Where necessary, CNSC staff used the graded approach to compliance enforcement.

The one unacceptable rating shown here resulted in the Designated Officer Request, as noted previously. In all other cases where inspections were below regulatory requirements, licensees addressed these non-compliances to the satisfaction of the CNSC.

The performance in the operating performance safety control area also remained constant since 2012. Non-compliances observed by CNSC staff during inspection at licensees comprising the medical sector were mainly administrative in nature and had no serious safety significance. In all cases, licensees addressed these non-compliances to the satisfaction of the CNSC.

The next sector to be reviewed is the industrial sector. Primarily, the use of nuclear substances is used in the form of sealed sources, often as radiation devices and other prescribed equipment.

The majority of licences are in this sector and are used for either portable or fixed gauges and includes a range of risk levels from the known risks associated with industrial radiography to the low risks associated with the use of X-ray fluorescence for the identification of metals and materials.

This sector represents 1398 licences issued by the CNSC and there are 8567 nuclear energy workers as of December 31, 2014. This represents 27 percent of all the workers in this sector.

Many industrial applications do not require that all workers are considered as nuclear energy workers, only those with the potential to receive significant exposure.

Safety performance results are provided for all licensees included in the industrial sector and the following four subsectors are highlighted in further detail:

- the fixed nuclear gauges where sealed sources in radiation devices monitor process flow in a pipe, storage tank levels or the density or thickness of

material being manufactured;

- oil well logging which lowers specialized gamma and neutron emitting sealed sources contained in a robust radiation device into a drilled hole to map out the subsurface geological structures and characteristics;

- portable nuclear gauges which use gamma and neutron emitting sealed sources in smaller radiation devices to measure parameters most often associated with civil engineering, including density, compaction, thickness and moisture content;

- industrial radiography which uses gamma emitting sealed sources in specialized radiation devices to provide field identification of well defects, structural anomalies and voids in cast material.

The CNSC's inspection program for the fixed gauge subsector was revised in 2014. The inspection frequency was increased from every five years to every three years and this provides for an enhanced regulatory oversight.

Under the revised inspection regime, CNSC inspectors conduct more field performance-based inspections in addition to conducting records and desktop evaluations. As a result, the number of CNSC inspections in this subsector increased in 2014.

The safety performance of the industrial sector continued to be good in 2014 based on CNSC staff evaluation and verification of licensee performance.

Doses received by nuclear energy workers in this sector remained low, with the majority of workers receiving doses below 1 mSv. No nuclear energy worker received a dose in excess of the annual regulatory limits.

Of the inspected licensees in this sector, 87.9 percent and 88.1 percent were found to be compliant in the operating performance and radiation protection safety control areas, respectively.

Licensees took appropriate corrective actions satisfactory to CNSC staff to address the non-compliances noted during the inspections.

Sixteen escalated enforcement actions were taken against licensees in the industrial sector in 2014. There were 10 orders and six administrative monetary penalties in this sector.

Most of the enforcement actions were taken against licensees in the industrial radiography and portable gauge subsectors.

The industrial sector saw a significant drop in the number of orders issued in 2014 compared to 2013 and this is primarily due to fewer orders being issued to licensees in the portable gauge subsector.

The overall compliance of the portable gauge subsector improved in all safety and control areas in 2014 and this demonstrates the effectiveness of the outreach and compliance promotion efforts by CNSC staff.

All licensees to whom orders were issued complied with the terms and conditions of the orders and implemented corrective measures to the satisfaction of CNSC staff. All six licensees who were issued administrative monetary penalties have paid their penalty amounts.

Seventy-seven percent of nuclear energy workers in this sector received doses below 1 mSv and over 95 percent of nuclear energy workers in this sector received less than 5 mSv.

Nuclear energy workers in the industrial radiography subsector continued to receive higher doses than workers in other industrial subsectors. This is a result of working in close proximity to exposure devices containing high activity sealed sources.

Nuclear energy workers in the portable gauge and oil well logging subsectors continued to receive low doses, with the majority of workers receiving less than 1 mSv.

Nuclear energy workers in the fixed gauge subsector continued to receive extremely low doses due primarily to the limited direct handling of the radiation

devices required in this subsector.

No nuclear energy worker exceeded the annual dose regulatory limit.

The overall licensee performance in the radiation protection safety control area has remained largely unchanged since 2011. Licensees in this sector are meeting expectations in 88 percent of inspections.

CNSC staff used a range of compliance enforcement measures commensurate with the severity of the non-compliances to bring licensees back within regulatory requirements. In some instances, based on safety significance, there was an escalation of enforcement action. In all cases, licensees addressed these non-compliances to the satisfaction of CNSC.

Whereas overall licensee performance in the operating performance safety control area is high and has remained largely unchanged since 2012, compliance has dropped to less than 80 percent in the fixed gauge subsector.

Note that the radiation doses received by workers in the fixed gauge subsector are the lowest in the industrial sector. Fixed gauges have a high degree of reliability and their use involves little interaction with the worker after the gauge is installed and in use.

During field observations, CNSC inspectors

noted deficiencies in licensee oversight of fixed gauges during normal operation. These deficiencies resulted in the failure to follow approved procedures. The CNSC has recognized that the lower performance of this subsector remains an issue and accordingly it has increased its regulatory oversight of the fixed gauge subsector in 2014. In all cases, licensees addressed these non-compliances to the satisfaction of the CNSC.

Turning now to the commercial sector, licensees in this sector generally provide services to other licensees, including:

- the distribution of nuclear substances and prescribed equipment;
- development and testing of radiation devices;
- servicing of radiation devices and other prescribed equipment;
- processing of nuclear substances; and
- storage of nuclear substances and prescribed equipment.

Servicing is an important function and the servicing of any prescribed equipment means any actions other than routine maintenance identified by the manufacturer of the equipment. Only those persons authorized by the CNSC can conduct servicing operations and

it has to be conducted in accordance with approved procedures.

In the commercial sector there are 248 CNSC licences and as of December 31, 2014 it represented 2077 nuclear energy workers. This represents almost 79 percent of all workers in this sector.

The safety performance results are provided for all licensees included in the commercial sector and the following five subsectors are highlighted in further detail:

- the processing of nuclear substances typically for nuclear medicine to match demand for medical isotopes more closely to the supply;

- the production of short-lived medical isotopes in accelerators and cyclotrons, and the processing of those supplies for distribution to other licensed locations;

- the distribution of nuclear substances and prescribed equipment, generally from manufacturers and suppliers within or outside Canada;

- the servicing of prescribed equipment, following specific CNSC approved procedures to ensure the safety of all persons; and

- the calibration of radiation detection equipment, where the possession of the equipment to conduct

the calibration requires CNSC authorization.

The commercial sector continued to show good safety performance in 2014.

Doses received by nuclear energy workers in this sector remained low, with the majority of workers receiving doses below 1 mSv.

Of the inspected licensees, 88.9 percent were found to be compliant in the operating performance safety and control area and
93.7 percent were found to be compliant in the radiation protection safety and control area.

Licensees took appropriate corrective actions, satisfactory to CNSC staff, to address the non-compliances noted during the inspections.

CNSC took one escalated enforcement action against a licensee in the commercial sector in 2014. The action consisted of an order to a servicing company in possession of a radiation device not listed on its licence.

The licensee complied with the terms and conditions of the order and implemented corrective measures that have been reviewed by CNSC staff and found to be satisfactory.

Almost 99 percent of all nuclear energy workers in the commercial sector received annual radiation exposures of less than 5 mSv and just over 90 percent

registered less than 1 mSv per year.

Nuclear energy workers in the isotope production accelerators, processing of nuclear substances and distribution subsectors continued to receive higher doses than workers in other commercial subsectors. This is due to the manual handling of nuclear substances and activated cyclotron components.

Nuclear energy workers in the servicing and calibration subsectors continued to receive low doses, with the majority of them receiving doses below 0.5 mSv.

The performance in this radiation protection safety control area remains very high, with almost 94 percent meeting expectations. This level of compliance is essentially unchanged from 2013, with the commercial sector continuing to show positive inspection ratings.

In all other cases where inspection ratings were below requirements, licensees addressed these non-compliances to the satisfaction of the CNSC.

No commercial sector licensees were identified as having an unacceptable rating as a result of CNSC inspections.

The operating performance safety control area for the commercial sector declined slightly in 2014 to 88 percent, compared to 94 percent in 2013. However, the

overall compliance value remains very high.

Only the calibration services subsector showed improved performance. The overall sector drop was mainly due to lower compliance ratings in the servicing and processing of nuclear substances subsectors.

I will now pass the floor to Ms Murthy.

MS MURTHY: Thank you.

Good morning. For the record, my name is Kavita Murthy and I am the Director of the Accelerators and Class II Facilities Division.

As the name implies, licensees in the academic and research sector are involved in learning activities in universities, colleges and research establishments, carrying out research in diverse fields such as biology, neurophysiology and materials engineering, just to name a few.

The academic and research sector accounted for 229 CNSC licences and 3,612 nuclear energy workers as of December 31, 2014.

The largest subsector in this cohort, which is the laboratory studies and consolidated uses of nuclear substances subsector, is highlighted in further detail in the report. The CNSC lab is included in this subsector.

We have seen a steady decrease in the

number of licences in this subsector over the years. The number of licences has dropped from 198 in 2010 to 154 in 2014. This change is in response to institutions finding alternative methods of performing research that do not require the use of nuclear substances.

For instance, in a variety of life science applications, techniques such as fluorescence, chemifluorescence and chemiluminescence have emerged as alternative technologies to the traditional radioisotope-based methods.

In 2014, the safety performance of this sector was generally good, as demonstrated by the low doses to workers and by the ratings of compliance inspections.

Where deficiencies were noted during inspections, CNSC staff ensured that licensees took appropriate corrective actions to address them in a timely manner.

The two enforcement actions referenced in this slide were the result of one incident. In May 2014, following notification of an event resulting from the failure to exercise inventory control over sealed substances, the CNSC issued an order and an administrative monetary penalty to a licensee.

The event was reported to the Commission during the August 21, 2014 meeting. The licensee has

complied with the terms and conditions of the order, implemented corrective actions and also paid the AMP.

Over 95 percent of the workers in this sector receive little to no radiation dose as a result of their occupation.

Ninety percent of the nuclear energy workers in the academic and research sector work in the laboratory studies and consolidated uses of nuclear substances subsector.

All employees who work at the CNSC labs are designated nuclear energy workers.

In 2014, six out of seven CNSC employees received doses below 0.5 mSv and one employee received a dose between 1 and 5 mSv.

In this slide we present the 2014 sector performance in the safety and control area of radiation protection. The Commission will note that there has been a decrease in the number of inspections conducted in 2014.

In 2013, based on the positive safety performance ratings and the low-risk level associated with these licensed activities, the inspection program for this sector was reviewed and the frequency of CNSC inspections was changed from yearly to every two years.

Such a review is in line with the application of a risk-informed regulatory decision-making

approach to regulated activities. It allows CNSC to better focus its efforts and divert resources to other areas that need it more.

There were 134 inspections of the radiation protection SCA in 2014. Eighty-seven percent of licensees were found to be compliant. This sector has shown improvement since 2010, when the compliance rate was 80 percent.

Where deficiencies were noted, CNSC staff used a range of compliance enforcement measures to bring licensees back into compliance.

In this slide we present the operating performance SCA compliance ratings. Overall, despite fluctuations over the past two years, performance in this SCA has remained generally constant since 2010.

Compliance results in this SCA were almost identical to the radiation protection SCA, with licensees meeting CNSC expectations in 87.4 percent of inspections.

In summary, the academic and research sector has a good safety performance track record.

The radiation safety officers working in this sector engage regularly with CNSC staff through formal meetings and outreach such as the Canadian Radiation Protection Association working group and via informal means by communicating with CNSC staff as and when required.

As a result of the events related to loss of control of sealed sources, CNSC staff have highlighted rigorous inventory control in its outreach activities to this sector this year.

The facilities that comprise the energy research particle accelerators facilities are Class IB particle accelerators.

The authority for granting licences and licence amendments for high-energy research particle accelerator facilities rests with the Commission and is not delegated to a designated officer, as is the case for licences in all the other sectors in this report.

The format of licence and the regulatory framework is similar to other Class I licences issued by the Commission.

There are two High-Energy Research Particle Accelerator Facilities in Canada, TRIUMF Accelerators Inc. in Vancouver, British Columbia and the Canadian Light Source Inc. in Saskatoon, Saskatchewan.

TRIUMF operates seven different accelerators on their site. The main cyclotron accelerator operates at 500 MeV and is the largest cyclotron in the world. Besides being Canada’s national laboratory for nuclear and particle physics research and related sciences, TRIUMF is also a major producer of radioisotopes used for

medical diagnostic procedures.

Canadian Light Source Inc., or CLSI, operates the only synchrotron facility in Canada. The synchrotron accelerates electrons to nearly the speed of light and produces very intense and highly focused light known as synchrotron light. This light is used to probe matter and enable scientists to study the microstructure and chemical properties of materials. In addition to the synchrotron, the CLS also operates a linear accelerator used for the production of medical isotopes.

In 2014, doses were monitored for 2,496 workers in these two facilities, of whom 429 workers were designated as nuclear energy workers.

The Class IB Particle Accelerator operating licences for both TRIUMF and CLS include a licence condition handbook, or LCH, which defines key documents and compliance criteria related to the facility. The authority to make limited changes to the licence condition handbook has been delegated to a designated officer with the proviso that such changes must not reduce the overall level of safety for the facility.

There was one amendment to each LCH in 2014. In both cases CNSC staff assessed the change request against approved licensing basis to ensure that the changes did not have an adverse impact on the overall level of

safety of the facilities.

Both TRIUMF and CLS have continued to expand their operations to incorporate new facilities for research and medical isotope production.

At TRIUMF the low power commissioning tests of Advanced Rare IsotopE Laboratory, or ARIEL, started in 2014.

At CLS, the Medical Isotope Project, or MIP, also underwent commissioning tests in 2014. In November 2014, MIP produced the first batch of molybdenum-99 for processing and testing.

The overall safety performance at these two institutions remained stable in 2014.

The doses received by NEWs at the two sites continued to be low, with the majority of NEWs receiving doses below 1 mSv per year. The maximum individual dose to any nuclear energy worker at these facilities was 6.3 mSv.

For CLS, there were no radiological releases to the environment.

For TRIUMF, the combined airborne and liquid effluent releases of nuclear substances from the site remained very low at 1.6 percent of the derived release limits, which translates to a maximum dose of less than 2 percent of the general public dose limit.

No enforcement actions were issued to either facility.

As you can see in this chart, a majority of workers working at the two facilities received doses below 0.5 mSv in 2014. No worker exceeded the regulatory dose limits.

The Commission will note that doses at TRIUMF are generally higher than those at CLS. This is due to the fundamentally different nature of the work conducted at these two facilities. However, it is worth noting that for the past two years staff doses at TRIUMF have been at their lowest level in the past 35 years of their operation.

In 2014, there were four inspections of TRIUMF and CLS was inspected once.

Using multi-disciplinary teams of CNSC specialists, the inspections assessed the licensee's regulatory compliance in several safety and control areas as indicated on this slide.

Eleven corrective actions were required as a result of the inspections at TRIUMF, three corrective actions related to site security and one related to incident reporting, and all of these were addressed fully before the end of 2014. The remaining seven corrective actions were all issued to TRIUMF near the end of 2014.

As of today, three actions remain open.

TRIUMF has made satisfactory progress to date in addressing these actions and all three actions are expected to be closed by the end of October 2015.

In addition, five recommendations were made to TRIUMF, primarily addressing issues such as improvements to procedures. All five recommendations have been implemented by TRIUMF.

For CLS, seven corrective actions were required as a result of the inspection, all of which have been addressed satisfactorily by the licensee.

In 2014, there were three events reported by these facilities. All events were ranked as level 0, or no safety significance, on the INES scale. I will go over the events in brief now.

At TRIUMF, a target window failure during a test irradiation of an experimental target resulted in the unintended release of up to 44 GBq of gaseous krypton-89. The estimated maximum doses to TRIUMF staff and to the general public were less than 0.1 percent of the regulatory limits.

TRIUMF also reported that the perimeter fence near the onsite scrap metal recycling depot had been breached and that a quantity of recycled copper had been stolen from its site. There was no access to any radiological work areas on the site.

At CLS, an operator in the control room temporarily disconnected the audible alarm of the monitoring system in the control room. Disconnecting the alarm had no impact on the function of the local audible and visual alarms located in each of the seven zones which are monitored for potential oxygen deficiency hazards but it did weaken the overall defence-in-depth of the system.

In all cases, the licensees implemented response measures which were reviewed by the CNSC and found to be satisfactory.

There was also one "near miss" incident reported by TRIUMF in 2014 during the commissioning of the ARIEL linear accelerator.

A worker was missed during a pre-lockup search of the accelerator room, or the "electron hall." Upon hearing the pre-irradiation alarm, the worker responded appropriately and exited the area by opening a door, causing the warm-up sequence to be terminated automatically by the door interlock system. The worker did not incur any radiation dose as a result of this incident because the accelerator was not in a ready state and was not producing radiation.

TRIUMF's investigation of that incident identified multiple contributing factors, ranging from a failure to properly implement procedures to incomplete

training, to inadequacies in the siting of the search switches.

All operations of the electron linear accelerator were voluntarily suspended by TRIUMF for the remainder of 2014 and most of 2015, pending completion of multiple corrective actions required to address these deficiencies. Authorization to recommence was granted in September 2015.

Compliance monitoring for TRIUMF and CLS is based on the SCA framework setup for other major Class I facilities.

Compliance rating in all 14 safety and control areas applicable to these facilities are summarized here.

The ratings are based on the compliance activities conducted in 2014, including inspections, review of events reported by each facility and a review of their annual compliance reports.

While compliance in most SCAs is satisfactory, the Commission will note that deficiencies are noted in management system and human performance management programs at TRIUMF in the context of the "near miss" event. This was the basis for the below expectations ratings in these areas and we will discuss it in a bit more detail on the following slides.

Management System. The management system safety and control area covers the framework that establishes the processes and programs required to ensure that an organization achieves its safety objectives and continuously monitors its performance against these objectives and fosters a healthy safety culture.

The near miss incident demonstrated an incipient failure to properly apply the approved standard operating procedures for the ARIEL project. Consequently, the management system SCA was given a below expectations rating by CNSC staff.

All corrective actions related to the application of management system to ARIEL have now been completed.

Human Performance Management. The human performance management SCA covers activities that enable effective human performance through the development and implementation of processes that ensure a sufficient number of licensee personnel are in all relevant job areas and have the necessary knowledge, skills, procedures and tools in place to safely carry out their duties.

In their root cause analysis of the near miss incident, TRIUMF identified deficiencies related to human performance management SCA. As a result, CNSC staff required that TRIUMF evaluate its other operational

activities in the context of the findings of this incident to ensure that the weaknesses observed were not systemic. All corrective actions related directly to ARIEL have been completed and are now closed.

In conclusion, both TRIUMF and CLS continued to operate safely in 2014.

Corrective actions related to non-compliances noted during inspection and as follow-up to the events have been addressed to the satisfaction of CNSC staff.

None of the incidents reported by these two facilities resulted in any adverse radiological consequences to any person to or the environment.

The ARIEL and MIP projects at TRIUMF and CLS continue to progress. Ongoing licensing and inspection of these new facilities will remain a regulatory priority in 2015.

I will now pass the floor back to Mr. Moses.

MR. MOSES: Thank you.

For the first time this year, the CNSC issued the draft annual oversight report for public comment during August 2015.

We were very pleased that comments were received from the Canadian Radiation Protection

Association, the Canadian Organization of Medical Physicists et de l'Association québécoise des physiciens médicaux cliniques.

We appreciated the constructive comments that these stakeholders provided on the report, both with respect to potential improvements to our report but more importantly the feedback provided on our own regulatory oversight activities. We will take these comments into account as we finalize this report and for future editions of the report.

In addition, we are encouraged by the commitments of all three groups to continued dialogue and engagement in our regulatory activities. It is through this engagement that we can meet our commitment to continuous improvement and ensure broad communication of changes in our regulatory requirements or approach, thus contributing to the overall safety and the safety culture of the industry.

I will now turn to a progress update on some of the activities that we have under way in 2015.

Firstly, as you are aware, the Commission amended, on their own motion, all DNSR licences to include a licence condition requiring licensees to have in place a financial guarantee mechanism by April 1st, 2015. I am pleased to report that all licensees are compliant with

this licence condition.

With the coming into force of REGDOC-2.12.3 in May 2015, DNSR has modernized our compliance oversight of the security of sealed sources to take into account these new requirements and we are already seeing the benefits of having clear requirements to ensure a continued focus on the security of nuclear substances.

Finally, as you are aware, the CNSC published the *Packaging and Transport of Nuclear Substances Regulations 2015* on July 1st, 2015. This will be featured in our fall newsletter to highlight the new requirements. Meanwhile, we are active internationally to ensure requirements in this area continue to reflect best practice for the transport of nuclear substances.

In addition to these items, we have a number of activities under way this year to enhance our regulatory oversight. These include updating licence application guidance for licensees, minimizing administrative burden through consolidation of CNSC licences and continuing to leverage new technologies for outreach, inspection and licensing activities. These will be profiled in next year’s regulatory oversight report.

In conclusion, both as a result of our disciplined licensing and certification reviews and our comprehensive and risk-informed compliance approach, and as

evidenced by the continued low levels of exposure across the industry, CNSC staff conclude that the use of nuclear substances in Canada is safe, with adequate protection for the health and safety of persons and due consideration to the security of nuclear substances and prescribed equipment.

Thank you for the opportunity to present this report to you today and we remain available to answer any questions you may have.

--- Pause

***CMD 15-M27.1 / CMD 15-M27.1A**
Oral presentation by the
Canadian Radiation Protection Association

THE PRESIDENT: Thank you.

There is a lot of material in here, but before we open the floor for questions I would like to hear from the Canadian Radiation Protection Association. They would like to make a presentation as outlined in CMD 15-M27.1 and M27.1A.

I understand that Ms Neretljak -- I'm not sure I have pronounced your name properly -- will make the presentation. Please proceed.

MS NERETLJAK: Thank you to the Canadian

Nuclear Safety Commission, Mr. President, for the opportunity to present in front of you today on the 2014 annual report, oversight report, the draft, on the use of nuclear substances in Canada.

My name is Tanya Neretljak. I'm current President of the Canadian Radiation Protection Association. And with me today is Ali Shoushtarian, Director of Internal Affairs. Ali and I are registered radiation safety professionals with the CRPA and we would like to begin with a brief introduction of the Association.

The Canadian Radiation Protection Association, or CRPA, is a not-for-profit professional organization that supports the development and implementation of radiation safety programs in Canada.

Our mission is to ensure the safe use of radiation by providing scientific knowledge, education, expertise and policy guidance for radiation protection. We do this by promoting educational opportunities in those disciplines that support the science and practice of radiation protection, assisting in the development of professional standards in the discipline of radiation protection, and supporting the activities of other national and international radiation protection relevant societies, associations and organizations.

CRPA is an associate society of IRPA, or

the International Radiation Protection Association, and our members sit on committees and task forces under the auspices of IRPA and ICRP and others.

In connection with today's report, our members represent licensees covered in all four sectors of the annual report, including hospitals or the medical sector, universities or academic and research facilities, commercial and industrial. Many of our members are directly responsible for the day-to-day operations and management of radiation safety programs.

I will turn it briefly over to Ali.

MR. SHOUSHTARIAN: Good morning, Mr. President and Members of the Commission. My name is Ali Shoushtarian, for the record.

The graph shows the demographic of CRPA representation across Canada. The red bars represent the Canadian population distribution and the blue bars represent the percent distribution of CRPA membership. As you can see, the Province of Ontario is where most of CRPA members are located.

The pie graph shows the CRPA membership by sector. Forty percent of our members come from the university and hospital sector and 10 percent of our CPRA members come from the regulatory sector.

This table shows our CRPA members cover a

variety of licence types, such as consolidated, fixed and portable gauges, servicing and diagnostic and therapeutic nuclear medicine, to name a few.

MS NERETLJAK: Registered members of the CRPA are individuals who hold the CRPA(R) designation. The CRPA(R) designation is the highest level of competency recognized by the CRPA at the Canadian level. The attainment of the designation is determined by academic achievement, experience in the radiation field and successful completion of an exam based on identified core competencies.

These competencies reflect many of the safety and control areas used to measure the safety performance of licensees and ensure comprehensive regulatory oversight. The purpose of the designation is to ensure the public, an employer or a regulator that an individual with the CRPA(R) credential has the qualifications and the knowledge and ability to perform duties as a competent professional in radiation safety.

Now, I would like to present our comments on the regulatory oversight report.

Unlike past reports, the compliance ratings results do not outline the Type II Inspection grading system results licensees are commonly familiar with and do not infer an overall compliance grade.

The safety control area data for operating performance, radiation protection and security does not quantify the meaning of "satisfactory regulatory compliance" or "regulatory compliance."

Under section 4.1, it is not clear whether an average compliance rating of 88.4 percent is indicative of inspections which yielded no non-compliances found, one non-compliance found, two non-compliances, et cetera, or any recommendations.

Under section 4.2.4, the report indicates for the security safety control area that:

> "Overall, all sectors showed satisfactory ratings."

Inspection ratings ranged from 94 to 97.6 percent in this safety control area.

This rating information is confusing and it is difficult to understand whether 88.4 percent is indicative of compliance inspections which yielded perfect inspections with zero non-compliances, when an inspection rating of 94 percent or greater in one of the safety control areas is only noted as satisfactory.

The CRPA recommends that the CNSC define the meanings of "satisfactory regulatory compliance," "regulatory compliance" or "in compliance" for the comprehension of the reviewer and note: After following

the CNSC staff presentation, it is evident that the regulatory oversight presentation has better represented the findings of the inspection results in comparison to the draft report released in August and some of these confusing rating results have been addressed.

Comment number 2. Many members of the CRPA who represent licensees and perform the day to day operational or executive functions of the Radiation Safety Program have previously indicated challenges ensuring compliance in other Safety Control Areas, in particular; human performance management, waste management, packaging and transport, and general management system which includes senior management oversight.

We would recommend that the CNSC include a brief summary or appendix on the findings of the other Safety Control Areas for inspections conducted in 2014 for the benefit of licensees reviewing industry-specific trends in their areas of concern.

MR. SHOUSHTARIAN: Comment number 3. In section 4.2.4, the report indicates that:

> "CNSC staff verified licensee compliance against requirements described in REGDOC 2.12.3, Security of Nuclear Substances: Sealed Sources".

This section highlighted very good compliance ratings but did not offer any insight into challenges faced by licensees to meet compliance.

For the benefit of licensees currently developing programs to comply with the requirements that come into effect in 2018, we recommend that the CNSC include a brief summary of any challenges faced by the inspected licensees to meet the requirements by the implemented deadline.

Comment number 4. In section 4.2.6, it is indicated that 141 out of 147 reported events were ranked as INES Level 0. Often, events which fall under the INES Level 0 and have no safety significance may be overlooked by the licensees. Events without immediate safety significance can lead to poor practices and if not captured proactively, can eventually result in an event with safety significance. Comparable events or practices at like institutions or organizations may be regularly occurring without being reported.

For transparency and the benefit of licensees, the CNSC should consider compiling a summary of INES Level 0 reported events for better operational experience sharing among licensee for the purpose of improving safety performance.

MS NERETLJAK: Comment number 5. Tanya

Neretljak, for the record.

Licensees have been closely following the issuance of orders as well as administrative monetary penalties, or AMPs, since their implementation in 2013.

Section 4.2.5 outlines the escalated compliance enforcement action in 19 instances. Licensees question the relevance of administrative monetary penalties issued in some circumstances and the lack thereof in others.

For example, in the event of Cliffs Quebec Iron Mining Limited, which led to 10 workers being exposed above the regulatory limits for workers, an order was issued following the event but no AMP was issued. This event was ranked as an INES Level 2.

In the event of Sunnybrook Health Sciences Centre and Sunnybrook Research Institute, an order was issued following the reported event of lost sources, and despite the corrective measures taken by the licensee an AMP was issued subsequently. This event was not ranked in the report, but comparable lost source events were ranked at Level 1 or 0.

Other lost source events did not result in AMPs including a Level 1 ranked event at the CNSC Laboratory.

More recently, an AMP was issued to an

Ontario university for an illegal transfer of a source within a scintillation counter. Despite voluntary and immediate reporting, assistance to the CNSC and corrective measures, an AMP was administered after determining factors assessed the penalty at a score of -2. The incident had no safety significance or actual or potential risk to the public or environment. This type of action by the CNSC in issuing AMPs can make licensees skeptical in offering information to the regulator.

For the benefit of licensees the CNSC needs to be transparent or show consistencies in their methodology for issuing AMPs. Regulatory compliance is now overshadowed by regulatory compliance tools which are more damaging to a licensee than beneficial to the radiation protection community.

And now I have some commendations.

Commendation for the licensees: In the executive summary, it was reported that:

> "More than 99.9% of the 60,407 workers received doses below their applicable regulatory dose limits."

We would like to commend the radiation protection community for their diligence and efforts afforded to ascertain doses to workers and ensure that doses remain as low as reasonably achievable.

And commendation for the regulator in relation to the last point: We would like to commend CNSC staff for making it a priority in their enforcement efforts that radiation protection programs are implemented to ensure that radiation doses to workers are well below regulatory limits and kept ALARA.

Commendation number 2: Under section 4.1 it was reported that:

> "For a second consecutive year, no exposure device operators or radiation safety officers at Class II nuclear facilities were decertified."

We would like to commend CNSC staff for their ongoing improvement efforts in providing more opportunities for licensees and other persons to interact with the regulator outside the scope of inspections and licensing activities.

The CRPA has supported stakeholder engagement activities across Canada for numerous years. It provides open forum discussion sessions and welcomes presentations from CNSC staff at its annual conferences. Members of the CRPA are also key contacts for CNSC staff in organizing licensee outreach sessions in their respective communities.

The CRPA and its members will continue to

support these efforts to maintain and continue to improve the safety of workers and the public and protect the health, safety and security of Canadians and the environment from the use of nuclear substances.

And I will return it to Ali for conclusions.

MR. SHOUSHTARIAN: Ali Shoushtarian, for the record.

Under section 4.3.3, it is indicated that the:

> "CNSC staff and representatives from the CRPA established a joint working group, the proposed mission of which is 'to be a forum for implementing solutions and resolving issues in order to promote a strong radiation safety culture while respecting and understanding the interest and expectations of stakeholders.'"

Commendation number 3: The CRPA would like to commend CNSC staff and their engagement with the CRPA and implementation of this working group. The significance of a collaborative relationship between the CNSC and CRPA, in particular with its registered members, is to progressively work through challenges affecting the

licensee and allow the regulator and licensee to share perspectives on common challenges. We believe that this relationship will greatly benefit licensees represented by CRPA members.

Concluding comment on the CNSC/CRPA working group and the importance of setting competency standards: With the assistance of CNSC staff, the following information was gathered for the performance of a licensee with a CRPA(R) as their RSO or alternate RSO. As quoted by the CNSC:

> "For 2014 there were 60 inspection reports for 16 licences that are associated with a CRPA(R). Licences that have a CRPA(R) as either an RSO or Alternate RSO as determined from our licensing database, were compliant 97% of the inspections for Operating Procedure and Radiation Protection SCA and 100% for security SCA."

As the Commission can see, this compliance rating is higher on average from the SCA compliance rating presented in the draft report across all sectors. Not all licensees with a CRPA(R) representative were inspected in 2014. From this information, the CRPA would like to

highlight the benefit and the value of having an RSO or alternate RSO who is competent in the field of radiation protection representing a licensee and managing their Radiation Safety Program.

We believe the CRPA(R) credentials is something that the Commission should be and could be promoting at a national and international level with respect to setting standards for professionalism within the field of radiation protection.

In conclusion, the CRPA would like to thank the CNSC for this opportunity to present these comments on the Annual Regulatory Oversight Report on the Use of Nuclear Substances in Canada and for its continued support to the association, in particular for the development of the working group with the NSRD directorate and attendance at our annual conferences where our members highly benefit from the open forums and presentations given by CNSC staff.

Thank you. Merci. We welcome any questions.

*__CMD 15-M27.2 / 15-M27.2A__

__Oral presentation by the__

__Canadian Organization of Medical Physicists__

THE PRESIDENT: Thank you. Thank you very much.

I would like now to turn the floor to the Canadian Organization of Medical Physicists for their presentation, as outlined under CMD 15-M27.2 and 15-M27.2A.

I understand Dr. Wilkins will make the presentation. Go ahead, please.

DR. SCHREINER: Actually, for the record, John Schreiner will start the presentation and then Dr. Wilkins will end.

Monsieur le Président, membres de la Commission, l'Organisation canadienne des physiciens médicaux, the Canadian Organization of Medical Physicists thanks the Commission for this opportunity to come before you and to comment on your recent annual report on nuclear substances.

Today, we would like to describe for the Commission what COMP is, what comprises its membership, our role in radiation protection in the medical sector, our impression of your annual report. And, more importantly, today we would like to express our intent on the part of

COMP to engage more fully with the CNSC and with other stakeholders in the medical sector in maintaining a strong radiation protection environment for Canadians.

I will not be reading all of the content on our slides. I will try to -- I will highlight various points on the slides in the interest of time.

What are medical physicists? We are physicists, trained physicists and engineers working in the application of physics in the medical sector primarily often with the use or radiation, ionizing radiation for diagnosis and therapeutics.

We are not a regulated profession. However, there is a well-defined path for training these days and we do have the Canadian College of Physicists and Medicine and equivalent American boards that are certification bodies that certify medical physicists. So in our formation we do have a certifying role for groups to ensure that we are well qualified to do our work and part of that preparation and formation, there is a large component in the training of radiation safety principles, radiation protection along with, in the Canadian setting members have to show a clear understanding of the regulations and of the relationship of medical physicists with the various regulatory bodies at a national and provincial range.

COMP is the main professional body that represents medical physicists in Canada. It was formed in 1989 although there were other organizations representing us since the 1950s and, as I said earlier, it is composed mainly of physicists and scientists in hospitals and cancer centres, although we do have a considerable membership at universities and research facilities.

We have six stated objectives. I won't read them here. Essentially, they are to promote the profession, to ensure that our membership has all the tools and information required so that they can continue to perform their duties at the highest level possible. We are becoming stronger as becoming a voice that speaks for the community and helping the community work together to have some kind of consensus, a view that we can present to our colleagues in other organizations, to stakeholders and to the regulators. Hence, we are here before you today.

The membership currently is just over 600 members and the thing I would like to highlight here is that most COMP members do work in CNSC-licensed facilities. Many of us work in the cancer programs and cancer centres across the country. Currently, between 30 and 35 COMP members are the Radiation Safety Officers at their respective institutions.

So we are an organization that is working

under a regulatory framework that you direct and are constantly interacting with members of the CNSC. The CNSC has recognized this and we appreciate this. This is as reported in your annual report, some of your outreach to our group.

And just to highlight a couple of things, members of your divisions, especially the Class II division regularly write articles for our newsletter to make us aware of things coming down the pipes or how we are doing with compliance. So those are very useful.

Very encouraging has been continued participation of CNSC staff with the COMP winter school which we described with the Canadian Partnership of Radiation -- Quality Radiation Therapy reported to you last year is one of the premier conferences in the world on radiation safety in treatment of patients. And your staff have been very active in this winter school, helping us to participate and helping us to run some of the sessions at that school.

Recently also, staff from the Class II helped us in writing one of our technical quality control documents which is a guideline on quality assurance and maintaining good practice and staff from the CNSC helped us to write our document on "Quality Assurance of Safety Systems in Radiotherapy Facilities".

We really appreciate these efforts and we want to recognize the effort that individuals, licensing officers and the organization has met -- has put forward to liaise with us. And so we recognize that we have to reciprocate and we have perhaps not always done that as well as we can.

Membership -- part of our membership, individuals of our membership, small groups of our membership; for example, the Quebec group who will read the written report in a second, have been very active in participating with the CNSC. COMP believes we have to come up to that standard that our colleagues are showing.

One of the things that we have done in the last year is to form a new liaison committee that will actually help direct the activities of COMP, tie our Radiation Safety Officers together, make us aware of things coming from the regulator, facilitate discussion and work with you and our partner organizations to better support radiation protection in the country.

And now I will turn the microphone over to Dr. Wilkins.

DR. WILKINS: Thank you, John.

For the record, I am David Wilkins speaking on behalf of the Canadian Organization of Medical Physicists, or COMP.

COMP has a few specific comments about the draft Nuclear Substances report. This slide shows Figures 20, staff doses in the medical sector. And I draw particular attention to the green bar. Radiation therapy staff doses in radiation therapy centres are where the majority of COMP members work and over 99 percent of staff in radiation therapy facilities received less than 0.5 mSv last year. I think it highlights that staff working in modern radiation therapy centres should expect to receive negligible doses, and they do.

This slide shows Figure 17, the sector-by-sector comparison of inspection ratings. And the yellow line shows the medical sector improved inspection, the percentage of inspections meeting requirements from 69 percent to 92 percent over the last five years. I would argue this is not stable. This is a significant improvement of which licensees and the regulators should be proud.

So there exists in hospitals a strong radiation safety culture which is facilitated by having highly trained staff in hospitals and generally well-defined policies and procedures. Much of this radiation safety culture can be attributed to the work of COMP and CRPA members over the years in enhancing radiation safety culture in these institutions.

We have also been helped in radiation therapy centres by the efforts of the accelerators and Class II facilities divisions to do comprehensive multi-day Type I inspections in cancer centres. These result in a very detailed look at the radiation safety program, a comprehensive report and specifically recommendations to improve the radiation safety programs. These have generally been very helpful in our sector.

These multi-day inspections include senior hospital administration and this process is also very helpful in ensuring that radiation safety is part of the organizational structure of the hospital and in helping to project the regulatory authority of the CNSC into the hospital and ensure that it gets the attention that it is due.

There is always room for improvement and, as John mentioned, we have had a number of very productive partnerships with the CNSC and we see areas to improve these. There are some unique challenges in the medical sector. We have staff, patients and families in controlled areas, hospitals or public institutions or community institutions with thousands and thousands of visitors every day and that creates some challenges for us sometimes.

We have an absolute focus on patient safety which is almost always aligned with staff and public

safety, but there are some specific areas where these might slightly diverge and that can create some challenges.

Increasing complexity of technology and procedures, constant demand for new technologies introduced particularly in radiation therapy in diagnostic areas. This is always happening in a climate of constrained resources and that creates some challenges.

And appropriate balancing of security concerns, as mentioned here in the context of public institutions with large numbers of visitors.

But there is no question that a strong radiation safety environment benefits patient safety and, as I mentioned, this almost always overlaps with staff radiation safety and safety for members of the public. But we have to work with the CNSC to make sure that regulatory considerations never impose significant barriers on timely access of patients to quality medical care. And that's certainly not to say that the medical sector should be held to any looser regulatory standards but, rather, I think, supports the need for ongoing dialogue with CNSC as the regulations evolve and are interpreted for new technologies. We are committed to working with the CNSC in this regard.

A few specific areas of mutual interest I think, that we can and are working on:

Connecting the regulatory structure to the national Technical Quality Control Guidelines that have been developed by COMP under the rubric of the Canadian Partnership for Quality Radiotherapy and ensuring their appropriate interpretation. These are written not as prescriptive regulations but as guidelines with some variation in application of local circumstances.

As I mentioned, security in hospital facilities using radiation is an area of ongoing mutual interest. Guidelines for deceased radionuclide patients, for example, cremation of brachytherapy patients, is an issue that continues to bedevil our colleagues and create some confusion, and we are eager to work with the CNSC to find clarity in courses of action when these things arise.

Generally reducing the administrative burden for CNSC and licensees, I think, is always a worthy goal, and we can work with the CNSC in that regard. And establishing compliance measures that better account for changes in technology as new methods of delivering radiation therapy evolve, for example, ensuring that the regulatory interpretations make sense.

An example of this would be adopting time average dose rate measures for shielding criteria for radiotherapy bunkers for certain types of technology.

These are just a few examples of areas

where, as I mentioned, we welcome collaboration with the CNSC.

So that concludes our formal presentation, and we're available for questions.

THE PRESIDENT: Thank you.

I think it's time to open the floor for questions. I'd like to remind colleagues that we also have a written submission filed by the Association québécoise des physiciens médicaux cliniques, so in the question, please direct your inquiries to any one of the presentation we heard and written submission.

We also have -- via teleconference, we have the Canadian Light Source, and I understand that Triumph is now on line also.

Triumph, you've been with us for a while. Can you hear us?

MR. CUBBON: Yes. We've been with you since the beginning.

THE PRESIDENT: Okay, great.

So colleagues, why don't we start the speaking with -- where's my list? I don't have a list.

Okay. I'm going to go in order here. Monsieur Harvey, get us going.

MEMBRE HARVEY : Merci, Monsieur le Président.

Je vais commencer en français avec l'Association québécoise des physiciens cliniques, qui sont très favorables au rapport mais qui ont un ou deux commentaires, dont un commentaire qui a lieu peut-être à la nomenclature, et c'est le premier paragraphe de commentaires sur la première page qui a trait à la terminologie utilisée pour le domaine de sûreté.

Par exemple, le domaine « conduite de l'exploitation » dans le rapport correspond-il au domaine « procédures opérationnelles » dans les fiches d'inspection de Type I et au domaine « procédures d'exploitation » dans les fiches de Type II? Voulez-vous commenter?

M. MOSES : Je vais répondre.

Dans le passé, nos domaines de sûreté étaient établis, puis on a développé des procédures d'inspection selon ces différents domaines de sûreté. Mais pour les besoins du rapport et la production du rapport, on a adopté les nouveaux... le framework SCA. Excuse-moi, j'ai oublié l'acronyme français. On a développé un nouveau format SCA pour le rapport.

Dans les anciennes éditions du rapport, on incluait une annexe qui donnait un petit « crosswalk » entre les...

MEMBRE HARVEY : Correspondance?

M. MOSES : Oui, correspondance entre le

framework SCA puis ceux qui sont utilisés dans les inspections.

Donc, je prends en compte cette suggestion, puis on pourra l'inclure dans l'édition finale du rapport encore cette année.

MEMBRE HARVEY : L'autre commentaire que l'Association apporte est au sujet des fiches. Lorsque vous allez inspecter, vous avez des fiches, et lorsqu'il y a plusieurs permis pour le même, vous arrivez avec, mettons, deux ou trois fiches différentes qui sont remplies, et ils se demandent, bien, comment sont agglomérés les résultats de ces trois fiches pour le même licencié?

M. MOSES : Je vais demander à madame Lucie Simoneau, qui est la coordonnatrice du bureau régional de l'Est, de répondre à comment on présente nos rapports lors d'une inspection.

MME SIMONEAU : Donc, Lucie Simoneau pour l'enregistrement.

Chacune des inspections qui sont faites ont un rapport individuel. Donc, que ce soit... Peu importe la localisation ou le type d'utilisation, un rapport est émis pour chacune des inspections qui sont faites, et dans le présent rapport, chacune des inspections est comptabilisée dans son entièreté, pas dans une

globalité genre pour le Centre universitaire de santé McGill, on a émis six rapports; c'est juste un. C'est six différents chiffres qui sont utilisés.

MEMBRE HARVEY : Ça fait qu'il n'y a pas d'agglomération?

MME SIMONEAU : Non.

MEMBRE HARVEY : Merci.

LE PRÉSIDENT : Mais peut-être qu'il faut expliquer ce processus dans le rapport.

M. MOSES : Oui. Je prends ça en note.

THE PRESIDENT: Okay. I'm going in order here. Ms Velshi.

MEMBER VELSHI: Forgive me if you'd just answered that -- the question in French, but I would like a sort of a quick overview in how you come up with your rating system.

So when you do an inspection and if there are some aspects that are below expectations and some that meet requirements and so on, you know, are there points given and is that an aggregation of that?

I know one of the intervenors also kind of wanted to know a little bit more detail on that, so if you can, without getting into too much detail, give us a synopsis of how that inspection rating has been calculated.

MR. MOSES: Colin Moses, for the record.

I'll turn the response over to Henry, but I think you're correct. When we develop our inspection work sheets, which are available up on our web site as well, we assign relative weighting factors of the different findings and the different requirements against which we're rating. And embedded in those work sheets that we use are a formula to aggregate those to provide an overall conclusion of the inspection.

So perhaps Mr. Rabski can provide some additional details to that.

MR. RABSKI: Henry Rabski, for the record.

Yes, to give you a high level perspective of how we come up with the overall rating, an inspection at a particular facility obviously addresses a number of safety control areas. The inspector will take with them an inspection work sheet and, on the work sheet, there will be a number of items that they will be covering over the course of that particular inspection.

Those particular aspects have been assessed in terms of their importance from a health and safety perspective, and they're also ranked high, medium and low. So each one of those individual items, they could be up to 40 to 50 particular aspects that are covered in the course of an inspection. They're all ranked by their safety significance high, medium and low.

When those -- those areas are also then related to specific safety control areas, so for example, if there were nine elements during that inspection that related to radiation protection, we use a formula and we rate -- we rate the importance of each one of those aspects and come up with an overall rating, taking into account their safety significance.

MEMBER VELSHI: Thank you. Yeah. I thought it was something like that.

So I'm now trying to -- and it's just a follow-up to that same question, is how do we translate that inspection rating to what we see in other parts, you know, the fully satisfactory, satisfactory and below expectations? And I particularly look at Triumph where, because of the near miss they had, their SCA rating for two of the elements was below expectations.

Is there a way to correlate the inspection rating to this overall global rating or there really is a different measurement scale and there really is no correlation?

MR. MOSES: I'll turn it over to Ms Murthy to speak to specifically the Triumph ratings, but in general, yes, we do -- we look at the results of the inspections, we look at the results of the events, if any, at the facility, and the overall performance outlined in

the annual compliance reports that are provided to us by each licensee. And looking at how each of those are -- sort of contribute to the overall level of safety, we take that into account in determining the specific ratings that are assigned to each of the SCAs.

Perhaps Ms Murthy can add some detail as to how that relates to the Triumph event and what -- why they result in the below expectations as a result of that event.

MS MURTHY: Kavita Murthy, for the record.

As Colin said, there is an aggregation of the different line elements that constitute an SCA that allows us to derive a grade specific to an SCA.

A below expectation grade is generally given when there is a local or a systemic failure of one or more elements in one safety and control area, so you could, in some situations, have minor failures and still end up with a satisfactory grade, but if we see concerns about an area where we say there is systemic failures, it's more -- more than just that one instance that says that there's something that needs to be corrected, then we will change the grade to a -- we will give a below expectations grade to that safety and control area.

MEMBER VELSHI: Thank you.

THE PRESIDENT: Again, does it make -- you

know, this question about the rating comes up in practically every -- not only with your shop, but in NPP, with mines. I think we need kind of an example.

We should have a paper and you take a fictitious facility and you go through the 40 indicators and you aggregate them and give the facility so everybody understands what the process is because we capture in one word, that satisfactory, a whole set of indicators, and I don't think there's understanding of how you derive the final mark.

I think it would be useful to do that, so take this under advisement for the future.

MS MURTHY: Kavita Murthy, for the record.

There does exist such a guidance for staff, and I think what we --

THE PRESIDENT: I know. We may want to actually put it on our web in one of those documents so everybody can see how it's done.

Dr. McEwan?

MEMBER McEWAN: Thank you, Mr. President.

I'd like to congratulate staff on this report. It is much, much more readable than last year, and I now actually can read it and think I understand what I don't know, so thank you. And also to the two intervenors, very helpful.

I'd like to start with the INES ranking applied to nuclear substances, and I think both intervenors made reference to this.

I was surprised that Level 1 and Level 2 were applied because I do not believe there is the granularity in those rankings to be able to address the issues that are -- that actually come up in this very complex group of sectors. Even within your sectors, you have, I think, some difficulty in fitting each of the different elements of that sector into that single sector.

And I note that many countries don't report below INES Level 1 or 2. And whilst I recognize that INES is not a numerical scoring system, if you look at the categorizations of Level 0, 1, 2 up to 7, it's roughly logarithmic. Simplistically, it's very logarithmic. And I think that most of the -- indeed, you show most of the problems that we have relate to the first two levels.

I think we have to come up with a much better way of categorizing those.

You're also dealing with more complexity of at risk populations. You have the general public, you have the worker, you have the patients, you have people caring for patients, so again, there is a wider range of people likely to be involved than there would be in the non-medical sectors in particular.

So I'd just like your comments and perhaps even from the intervenors some understanding of why you actually decided to report those levels and whether you think it makes sense to look for a way of greater granularity.

MR. MOSES: Colin Moses, for the record.

The INES scale is developed as a communication tool, so it's about sort of outlining what level of concern and what level of response you'd expect out of different events. And you need to take it for what it is.

So when we analyze events, I mean, we heard reference to one of the events which was classified as a relatively low level on the INES but did result in an order and an administrative monetary penalty. And when we determine the regulatory response to an event, we take in a much broader range of factors than, really, what would be outlined in the INES event.

But what we were finding in the past is that it's difficult to look at across, you know, 150 to 200-odd reported events to the CNSC every year and tease out the truly significant ones. And we thought the INES tool would be a useful tool with that respect.

Separately from the report that we are also looking at, better opportunities to share operating

experience from all events regardless of whether they're classified at Level 1 or Level 2 on the INES scale with the industry so that, as was noted by the intervenors, we can learn from all the different types of events.

We do leverage also some of our outreach tools through the workshops and the outreach meetings that we have with industry as well as the DNSR report to highlight specific events that we think are of note to the industry and important for them to consider, again, regardless of whether it was scaled on the INES scale at Level 0, 1 or 2 because it's important to learn from those events before they do become a more significant event or a similar occurrence at a different facility.

MEMBER McEWAN: I think you've just agreed with me that it actually adds very little value and that we really do need some way of communicating these events in a way which is more relevant to the sectors that you're dealing with.

THE PRESIDENT: Mr. Jammal?

MR. JAMMAL: Thank you, Mr. President. It's Ramzi Jammal, for the record here.

If you'll allow me a bit of brief history with respect to the INES scale. At the last year presentation of the report, the Commission requested information how do we stand against INES scale. So that's

the historical conclusion. I fully accept it.

And I fully accept your comments, Dr. McEwan, with respect to the granularity associated with the INES scale.

Let me give you some history with respect to someone who was sitting on the INES scale committees back in the eighties, and that's my opinion. That's not the regulatory position.

The opinion was to include the radiological event. That means events associated with sources into the INES scale. I, personally, was not in support of such thing, so that's the historical element, but since we are part of the global international community, I fully accept the fact that we have to look at the INES scale and the reporting mechanism within the INES scale because the INES scale as mentioned by Mr. Moses is a communication tool and we can refine how we can report on this.

So this is our first crack at it, and I will not be hiding anything because I had this very strong debate -- as a matter of fact, sometimes heated -- with the staff here on the scaling, on the INES scale, and my hands were tied, says we follow the international process.

So we take your comments, we accept it, and we're going to go back and look at how do we

Canadianize the INES scale without taking away the communication tools.

So I fully accept what's been presented by the COMP or by the CRPA, so there is -- we have more work to do, but without really moving away from the intent of the INES scale because internationally, as you are aware, a lot of the individuals from the public other than the workers were exposed, and specifically in Scotland, in France were multiple patients actually. And Dr. Schreiner here, who intervened multiple times in South America or internationally, actually with these events.

At the international level, they said, well, what does this mean. How do you communicate to the public? So that's why it came about, from his perspective.

I fully take it. We will take that comment back and that was the first crack in our report on the INES scale, and we will refine it. And working with the industry and licensees will be of benefit to us so we are able to establish what does the INES scale mean but, at the same time, intending harmony with the international group because we have -- we are reporting internationally against the INES scale into a database of the IAEA.

MEMBER McEWAN: Thank you. Very helpful.

I mean, I do agree that if you look at the French or the Scottish experiences, they absolutely fit

onto the INES scale because you're now moving up into a level of population seriousness where that communication becomes helpful and important.

I'm sorry. Do the intervenors have any thoughts or comments on that?

MS NERETLJAK: Tanya Neretljak, for the record.

The only comment that I had was with respect to Mr. Moses. He was saying that he will do kind of an operational experience sharing with 1 and 2 Level events. I just want to make sure that you include the Level 0 events because those are the ones that licensees can really learn from.

DR. SCHREINER: John Schreiner, for the record.

Perhaps the only thing I might say is, again, when we talk about patient groups, it's a different ball game in a sense because, in fact, the CNSC is not regulating what we do with patients. However, as was presented to the Commission May last year, there is an initiative under the Canadian Partnership for Quality Radiotherapy and CIHI to develop an incident reporting system -- a national incident reporting system that will be used to report incidents in patient treatment in radiotherapy that would be following the accepted

guidelines for how we rank those kinds of incidents.

It's not an INES scale, but it's a -- taxonomy has been developed so that we have standardized reporting and we make sure that we're catching especially these critical incidents that impact our care. Thank you.

MEMBER McEWAN: I would just add that you should probably be looking at unsealed source therapies for that now as they're becoming more common and more complex and more frequent as well as the external beam and sealed sources.

DR. SCHREINER: I'll bring that forward.

THE PRESIDENT: Thank you.

Mr. Tolgyesi?

MEMBER TOLGYESI: Merci, monsieur le président.

My comment is regarding administrative monetary penalties, a measure which is aimed to be a kind of dissuasion measure.

There were some comments on appropriateness and fairness of these measures in several specific cases which was -- which were submitted by the intervenor.

So first of all, to staff, could you present guidelines when it's considered and how you make sure that it's appropriate and fair?

MR. MOSES: Colin Moses, for the record.

Well, first of all, it's considered at every non-compliance and every order or other enforcement action. We look at the different tools that are available to us to determine the most appropriate tool not only to ensure continued compliance, but also to drive compliance across the industry and within the licensees.

So whenever we come across a non-compliance, whether it's through an inspection or through an event report, we look at the different tools that are available to us to select the most appropriate one in the circumstances.

Actually, embedded in the Regulations are determining factors that help us weigh whether or not an AMP is appropriate and, if so, at what level that AMP should be applied. Those include not only the harm or potential harm that resulted from the event or from the circumstances, but also looks at the compliance history of the individual who -- of the person who committed the violation, the degree of intent or negligence associated with the person, whether there was competitive or economic benefit as a result of the non-compliance, whether the individual cooperated with the Commission in a follow-up and review of the event and whether there were reasonable efforts to mitigate or reverse the violations effects.

And so we look at -- you know, each occurrence is on a case-by-case basis taking into account that wide variety of different determining factors to choose the most appropriate regulatory response.

THE PRESIDENT: Okay. We understand the theory, but there was a good example given here on Cliffs Quebec Iron.

Could you please deal with this, why an order was issued, but not an AMP? I mean the intervenor made that statement. What was the rationale? Please explain.

MR. FUNDAREK: Peter Fundarek, for the record.

In the case of Cliffs Iron Mining, we looked at the situation, and, yes, you're correct that the order was issued and the licensee did comply with all the requirements in the order and implemented measures necessary. But when we looked at the evaluation of the event itself, we found that the licensee followed the approved procedure, with the exception that instead of having two persons conducted at the same time, one person conducted the procedure first, and then the second person followed thereafter.

This was an unforeseen complication in the matter and introduced the opportunity for an error on that

situation, and that resulted in the lapse of oversight that allowed for the exposure to those workers.

So when we looked at that incident, we saw that there was a real deficiency in the overall process. We have since addressed that deficiency by implementing new licence conditions.

So it wasn't felt that it was necessary to impose an administrative monetary penalty in that situation because the licensee had taken corrective measures, sufficient corrective measures, and there wasn't a systemic issue that was identified as a result.

There was no rationale or reason for issuing an AMP because to issue an AMP at that point in time would have been considered punitive, which is not the case that is allowed for the administrative monetary penalties.

So in that case we were looking at an issue where there was a breakdown in a process that had not been previously identified, and we, as well as the licensee, took corrective measures on that to ensure that sort of thing doesn't happen again.

THE PRESIDENT: CRPA, are you happy with this explanation?

MS NERETLJAK: I'd like to consider myself a friend of Peter, so I'm going to reserve to comment.

--- Laughter / Rires

THE PRESIDENT: That's your chance, you know, to disagree. We accept disagreements.

MS NERETLJAK: Tanya Neretljip...Neretljak, for the record. See, I can't say my own name either.

The only thing I would ask is, if they went through the process of looking at what -- would they be issuing an AMP if they went through the process, compared to another person who had received, you know, a score of zero, or less than zero, and then got an administrative penalty of just $1,000?

So what would have been the corresponding factors in play, and whether or not an AMP would have been issued if they went through that exercise, only because in this case you had actually people with exposure compared to other incidents where there was no exposure.

THE PRESIDENT: But the way I understand the interpretation was that the CNSC carries some of the blame on itself for lack of clarity and maybe guidance here. So there's always going to be this kind of analysis done. It's not a very precise science in many, many cases. You've got to use some judgment.

Mr. Jammal, do you want to help us with this?

MR. JAMMAL: It's Ramzi Jammal, for the record.

I'm not going to go into the debate between the licensee and the regulatory program director, but I would like to clarify a couple of things.

Again, the AMP was instituted. It's been almost a year in its implementation. We've learned a lot from the process. The question is: Is there an independent review of the AMP? Yes, there is. A completely separate group that will look at the AMP itself, and recommendation associated with it.

I just do not want this one to be left out as the AMP, -- it's not the cowboy action by the inspectors who are imposing AMPs. The AMP process itself has an appeal mechanism, so the ultimate appeal is the Commission itself.

So the AMPs were reviewed by the Commission, especially in the cases highlighted by the CRPA, and so did the order issued by the inspector or designed officer, that they were heard by the Commission.

So the regulatory process we have in place provides opportunity to a licensee at any time to escalate the issue, even at the regulatory level, at my level, and if they need to go through the appeal process with the Tribunal it will be the Commission.

So I do not want to leave this out, that it is just staff who are doing punitive action or the regulatory tools. Based on the Commission structure there is always an appeal mechanism in place, and the ultimate decision lies with the Commission.

THE PRESIDENT: Thank you.

Mr. Tolgyesi.

MEMBER TOLGYESI: My second question is related to here also.

On your slide 17, Canadian Radiation Protection, you are saying that regulatory compliance is now overshadowed by tools which are more damaging to licensees.

Could you explain that? What you mean by that it's more damaging, because there was a non-compliance and there was the reaction of the regulator?

MS NERETLJAK: Tanya Neretljak, for the record.

So with this comment, it was -- ever since the implementation of the AMPs in 2013, there's been a lot of discussions among the licensees about sharing experiences and event. If these events fall under section 29 of the general regs, we definitely have a reportable event to the CNSC, but other sharing information across the board sometimes is voluntary from the licensee.

You may think that you're doing a process or something within your program, and you reach out to your licensing officer, ever since the issuance of these AMPs, the licensees feel that if they go their licensing officer this can come back now and result in either an inspection, an order, or now an administrative monitoring penalty.

So people that support the licensee are now subjected to these AMPs, either an individual or the organization. In which case, when we see examples like this -- and in some of the events it was voluntary reporting. There's other incidences that we know of where a similar event could have happened, and it could have been dealt within internally and not necessarily reported because it doesn't strictly fall under section 29.

Things like this may no longer be readily reported to the CNSC and just dealt with in-house. For example, if a source has been lost for one or two days, and then comes back, we may not necessarily report voluntarily because of the issuance of an AMP.

MR. MOSES: Colin Moses.

If I could just comment on that, we are sensitive in choosing the regulatory approach about that consideration. I can appreciate the reservation around reporting to the regulator events that happened at the facilities if it means that the regulator will come down

with a very heavy hammer on that.

And we do take that into account in determining an appropriate response. I did outline in the regulations a specific clause that takes that into account in determining the violation or the relative amount of that.

So we can appreciate that, and that's particularly why we put an emphasis on outreach to the industry, through our newsletter and other activities, to encourage voluntary compliance and to share this operating experience in less adversarial manners.

DR. SCHREINER: John Schreiner, for the record.

I think part of the challenge that we have sometimes also and as we have been communicating more with our colleagues at the regulator. We also deal with other regulators who sometimes are a little bit less collaborative, so one gets a little bit nervous about things.

Occasionally -- and I think this has improved with time -- occasionally we get slightly different interpretations, depending on who you're talking to, and that can be a complication sometimes also.

We can understand that there's different levels of experience at the various divisions. People are

trying to help. And a lot of it often is personal relationships. As Tanya just said, she didn't want to say anything against Peter because they have established a relationship. These relationships are very important, but you don't always have them.

I think one of the things that we would ask the CNSC to look at is: How do we have people deal with their clients -- "clients," is that the right -- with their various centres -- various licensees in a consistent manner?

You know, I know that they try to do that. When they do a Class 1 inspection now, you always have a young guy or a young woman coming along to be trained. It's funny. Sometimes they're the strictest of the group. They want to hit us with all kind of things, and you have to try and ask them to relax a little bit and remember how we're trying to work together.

But I think one of the things we all have to work on is a more consistent approach. I must say in our community -- also not all of the RSOs in our community are as collaborative as David and I, who are sweethearts.

--- Laughter / Rires

THE PRESIDENT: Okay, we've got to break here for lunch. We have a logistical problem because we promised to reconvene and start the next item on our

emergency management for 1:30.

Can we push them beyond 1:30?

MS McGEE: We'll confirm that.

THE PRESIDENT: You'll have to confirm that.

So we're going to take maybe...we'll come back at 1:30, and I'm sure there are lots more questions on this particular topic.

So thank you, and we'll see you in about one hour.

--- Upon recessing at 12:34 p.m. /
Suspension à 12 h 34
--- Upon resuming at 1:31 p.m. /
Reprise à 13 h 31

THE PRESIDENT: First of all, let me start by thanking staff and some intervenors for being flexible and allowing us to flip the agenda.

So we will resume the previous discussion around three o'clock, but right now we will deal with the next item on the agenda, which is an update from CNSC staff on the distribution of potassium iodine KI tablets.

And where are they?

MS McGEE: They're not...good question.

--- Laughter / Rires

MS McGEE: Perhaps we'll just go straight into the OPG presentation.

***CMD 15-M43/15-M43.A**

Oral presentation by CNSC staff

THE PRESIDENT: Okay. I'm going to read it, and maybe they'll show up while I'm reading it.

So this is the update on the distribution of potassium iodine KI tablets, as outlined in CMD 15-M43 and 15-M43.A.

We have representatives from the Office of the Fire Marshal and Emergency Management that are joining us via teleconference, and they will make a presentation later.

Just to test the technology, Mr. Kontra, can you hear us?

MR. KONTRA: Yes, I can hear you.

THE PRESIDENT: I think you should turn off the webcast because we can hear the webcast, which has a delay built in.

MR. KONTRA: I was just doing that as we were exchanging.

--- Laughter / Rires

THE PRESIDENT: And I understand there's also a representative from the Ministry of Health and Long-Term Care also with your group.

They are there?

MR. KONTRA: They're not on. They should be on momentarily, with Mr. Nodwell and Mr. Shingler.

THE PRESIDENT: Okay.

And I understand also that we have a representative from the Canadian Nuclear Laboratories joining us via teleconference, and this is Ms Fisher.

Ms Fisher, can you hear us?

MS McGEE: She's not on yet.

THE PRESIDENT: She's not on yet.

Is that Ms Fisher? No.

Whoever just joined us, can you identify yourself.

UNIDENTIFIED MALE SPEAKER: It is CNL here, from Chalk River.

THE PRESIDENT: Thank you.

So I think I've seen some familiar staff. Are you guys ready?

MR. AWAD: Yes, we are ready.

THE PRESIDENT: So I understand the staff will start the presentation. Mr. Awad, the floor is yours.

MR. AWAD: Merci, Monsieur le Président.

Bonjour membres de la commission.

My name is Raoul Awad. I'm the Director General of Security and Safeguards at the Canadian Nuclear Safety Commission.

With me today is Richard Tennant, a specialist in the Emergency Management Programs Division.

With us also, as you said, via teleconference or present here, a representative from the Office of the Fire Marshal and Emergency Management, as well as the Ministry of Health and Long-Term Care, and representatives from major licensees.

I will start with the background information, and Mr. Tennant will give an update for each major facility, and then, finally, I will wrap up with a brief summary.

This is the second update on the KI pills distribution initiative. This initiative is a result of our Regulatory Document 2.10.1 on emergency management and a decision made by the Commission to have KI pills redistributed in the primary zone and pre-stocked for the secondary zone for all nuclear power plants and Chalk River sites.

This requirement was included in the Licence Conditions Handbook for these facilities, with a completion date of December 2015. The requirement was for

KI pills to be pre-distributed for all residences, businesses and institutions within the plume exposure planning zone. This zone is normally between 8 and 12 kilometres for a major facility. For example, the Chalk River primary zone is 9 kilometres, the nuclear power plant 10 -- in Ontario, 10 kilometres, and Point Lepreau 12 kilometres.

In addition, there is a requirement for KI pills to be purchased and pre-stocked in strategic locations in their ingestion planning zone, typically 50 kilometres.

Please note that the main focus of our presentation today will be for Ontario, as New Brunswick already meets the requirement as defined in our REGDOC 2.10.1 since 1982, and Gentilly-2 is in the decommissioning phase.

The Office of the Fire Marshal and Emergency Management has established a cross-functional working group to coordinate and manage this initiative. In addition to the main working group, there are two task groups in place focusing on the distribution and the public education aspects.

More than 10 organizations are involved in the working group, including provincial ministries, regional- and municipal-level licensees, and more recently

Telehealth, to provide health-related information and assist with logistical support, such as storing a large amount of KI tablets. There continues to be good engagement by all representatives of these organizations.

Since the last update to the Commission, the Ontario working group have accomplished a number of important tasks. Based on the results of focus groups, meetings and public polling conducted by OPG in Durham Region, a distribution strategy was chosen and will be described in the upcoming slide.

The policy framework was updated for primary and secondary zones to allow a close follow-up after the distribution. This strategy involves making KI available at pharmacies, secondary zone, warehousing and an emergency distribution option in the event of an emergency. More recently, Telehealth has been added to provide support to the province.

A one-stop website for Ontario was developed to ensure information on all nuclear emergency preparedness and response, as well as a KI program, and this website is now live, and also provides links to other key organizations, such as local authorities, the Ministry of Health and Long-Term Care and the CNSC.

I will turn my presentation to Mr. Richard Tennant to provide an update on each side.

MR. TENNANT: Good afternoon, Mr. President, and members of the Commission.

My name is Richard Tennant, and I'm a Licensee Emergency Programs Officer in the Emergency Management Programs Division.

As mentioned earlier, the working groups have developed and adopted a strategy for pre-distribution and pre-stocking for the nuclear power plants and the NRU reactor at Canadian Nuclear Laboratories in Chalk River, Ontario.

For the primary zone, sufficient KI will be pre-distributed for each person for two days. For the secondary zone, the working group has decided to purchase and pre-stock KI pills for the sensitive population only. The sensitive population consists of pregnant or breast-feeding women, as well as people of 18 years of age and under.

I will now provide an update for each facility.

Bruce Power has completed its pre-distribution to residences, businesses and institutions in the 10-kilometre primary zone. Pre-distribution activities included information sessions, a door-to-door campaign and a mail-out. Bruce Power continues to work closely with the province and the local authorities, such

as Grey Bruce Health, to ensure that an effective KI pre-distribution maintenance and communications plan are in place. Bruce Power has developed a specific website to ensure the public are well informed.

As for the secondary zone, efforts are under way to pre-stock KI at designated locations and at a few special locations, such as schools, hospitals and fire halls, to name a few.

A community safety guide, which is provided in the annex of the CMD, was sent out with information pertaining to KI, and the guide also includes a voucher for people to claim their KI tablets if they wish to obtain it in advance.

The 50-kilometre pre-stocking is on target for completion by the end of the year. CNSC staff is confident that the pre-stocking of KI pills in the second zone can be completed by the end of the year.

Now for OPG.

Pickering and Darlington actions are being managed as one project for the whole region. For the primary zone, a mail-out is planned for early October. OPG continues to work closely with the Regional Municipality of Durham, the City of Toronto, which includes parts of Scarborough, and the OFMEM, the Office of the Fire Marshal and Emergency Management.

OPG conducted public polling with the community to assist them to determine the preferred method to pre-distribute KI. Outreach and media activities are taking place in preparation of the mail-out, including a number of successful focus groups which were held with the public, a press release and information products.

As for the secondary zone, stockpiling of KI is under away and is planned to be completed later this month. Delivery is in progress and logistical support to store 6 million KI tablets provided by the Province of Ontario. CNSC staff is confident that OPG can successfully meet the requirements for KI by the end of the year.

For the Canadian Nuclear Laboratories in Chalk River, it was decided to pre-distribute the KI in its primary zone by registered mail in mid-October. CNL developed a communications plan and are working closely with OFMEM, and also with the Province of Quebec, to ensure residents across the Ottawa River are well informed of this initiative. Meetings have taken place with key organizations, including a video featuring local mayors and local medical representatives.

As for the 50-kilometre secondary zone, KI tablets are being acquired and CNL is in the process of identifying locations to stockpile the KI tablets both in Ontario and in Quebec. CNSC staff is confident that CNL

can successfully meet the requirements by the end of 2015.

I will now return the presentation to Raoul Awad.

MR. AWAD: Thank you, Richard.

In conclusion, Mr. President, and members of the Commission, New Brunswick already meets the requirements and the Commission decision since 1982. As for Ontario, key stakeholders continue to work closely together to implement their pre-distribution and pre-stocking strategies with each of their host community. The CNSC staff would like to mention that there has been good progress to date on this initiative and we are confident that our licensees are on target to meet their December 2015 deadline.

With regard to G-2, G-2 used to meet the requirement before the shutdown, but currently the KI pills are no longer required.

This concludes our presentation and we are ready to answer any questions you may have.

THE PRESIDENT: Thank you.

I should have recognized the representative from Bruce Power. Frank Sanders is here with us.

We're going to hear now from the licensees, and I understand that OPG would like to make a

presentation.

Mr. Powers, I understand you're going to make it, so please proceed.

MR. POWERS: Good afternoon.

For the record, my name is Kevin Powers, Director of Public Affairs at Ontario Power Generation.

This week the first of 200,000 homes and businesses around the Pickering and Darlington stations are receiving their KI packages in the mail. It's the culmination of over a year of work, and I'd like to take a few minutes to take you through the steps that led us to where we are today and where we're going.

While the first homes and businesses are just receiving their packages this week, this is the second phase of a public education campaign that began right before Labour Day. I'd like to take you through the pre-distribution campaign, and the research that went into it, the distribution campaign itself, the communications and advertising, the phases of the distribution, and a discussion of the availability in the secondary zone.

As you're aware, the requirement for pre-distribution of KI by the end of 2015 has been added to the Licence Conditions Handbooks for the nuclear generating stations. The requirements are also detailed in the Regulatory Document 2.10.1.

Under Regulatory Document 2.10.1 all households, institutions and businesses within the designated plume exposure planning zones in Canada be provided with iodine thyroid blocking agents, and instructions on their proper use, by the end of 2015.

A team from Ontario Power Generation, Durham Region, Toronto and the Province of Ontario have been working together on the communications and distribution strategy for the 200,000 homes and businesses in the primary zones around the Pickering and Darlington stations. We are on target.

Our pre-distribution campaign, which began prior to Labour Day, wrapped up yesterday and we expect all of the pills to be delivered to each of the 200,000 homes and businesses by mid-October.

We began our efforts in earnest on this project in January of this year with focus groups in the primary zones around Pickering and Darlington. The challenge we were facing was unlike any other operator in Canada and very few around the world.

Central to the communications and distribution challenge is the diversity of the population. With 200,000 homes and businesses we would be distributing to everyone, from OPG employees to people who didn't even know they were in the primary zone of a nuclear facility,

from farms in Clarington to high-rises in Scarborough. There were those who had diligently got their pills at pharmacies and those who didn't even know what KI pills were.

Our intent in those first focus groups was to understand what people knew about KI pills, what they knew about emergency planning and mainly what they would think if suddenly a box of radiation-blocking pills landed on their doorsteps.

The initial results were discouraging. Many expressed concern about the distribution. They found the idea alarming or concerning in that it suggested an imminent risk they weren't aware of. There were a lot of fears and questions.

We followed up the focus groups with quantitative polling to better understand how to effectively address those fears and concerns by taking each concern raised in the focus groups and testing which answers best address them.

We discovered through the quantitative polling that there is reasonably high awareness of KI pills, it's 73 percent of the population, that those who don't have them say it's because of a lack of information, not opposition. Once provided a description of KI pills, 83 percent of the population said it was important to have

them at home and, encouragingly, 85 percent of the population said they were open to having them mailed out by authorities if there was a pre-distribution campaign that first addressed their main concerns.

The information we gained here helped us form the outline of a public awareness campaign and determine what information would help the broader public understand the program.

We then had another set of focus groups. Here we mocked up several variations of campaign executions to determine what order worked best for the products, what products and images were most effective and whether the messages from the quantitative polling were truly effective.

By the end, we were satisfied that we had the right campaign format, the right products and the right messages for everyone from the most to the least informed to meet our campaign objective.

Simply stated, the objective of the campaign is to build awareness of KI pills. This means dispelling concerns, telling people why we are doing this now and not 30 years ago, what the pills do, under what circumstances they should be taken, and providing information on how and when they would be taken as well as instructions on their storage and use.

Our research led us to the conclusion that the best approach to meeting this objective was a two-phased public awareness campaign.

The first phase was the pre-distribution campaign. This was a focused, intensive public education campaign that raised awareness of the distribution with the intent of explaining why it is occurring and what it means.

The second was the distribution campaign itself. This was using the pill packaging to drive an understanding of when and how to use the pills and reinforcing the safety of nuclear facilities.

I would like to take a few minutes to walk you through these.

In the week prior to our pre-distribution campaign, myself, along with members of Toronto and Durham, met with local media to walk through the campaign elements so that we had TV, radio and newspaper coverage in the days leading up to the campaign launch.

On the week of September 4th, we wrapped all of the major newspapers in Durham and in Scarborough with our ads. These ads have appeared inside the newspapers every week since then and will continue to do so over the next couple of weeks. We also bought outdoor ads in bus shelters, billboards and GO train stations.

The central insight driving the slogan and

the graphics is that safety takes preparation. Keeping KI pills is no different than keeping a fire extinguisher in the home. You don't expect to use it but it's better to be prepared. The public in our focus groups instantly understood this.

The same week, residents in the primary zones also received a letter, co-signed by the Medical Officers of Health of Toronto and Durham, letting them know that KI pills were coming and why. In that letter, which I have provided to you, we also included a brochure with the most frequently asked questions from the focus groups.

Those with further questions were sent to a new website preparetobesafe.ca. That site featured more information on KI pills, emergency preparedness and an interactive map to help determine whether you were in the primary zone or not.

Those with even more questions were asked to call the call centres for Toronto, Durham and Telehealth Ontario.

Throughout this time, OPG, Durham and Toronto used Twitter to bring attention to the program.

As I mentioned, the distribution campaign has begun this week as the first of the 200,000 homes and businesses began receiving the pills. I have distributed a number of examples of the package that people are

receiving.

You will note it is branded like the rest of the campaign. This was a design people said was memorable without being alarming and that they wouldn't throw out. It is also meant to fit into medicine cabinets.

You will also note that the front end of this has frequently asked questions and instructions for use. Our focus group participants said they wanted all of the information and the pills in one easy-to-read package.

You will also note the pills are nestled in the back cover. Upon delivery, all of this is shrink-wrapped to allay fears of tampering, which was a concern we came up against in our focus group testing.

While these are being distributed, the advertising campaign continues.

In addition, the website preparetobesafe.ca has been enhanced to allow families and businesses in the primary zone to order more if for some reason they didn't get them or they didn't get enough.

In three weeks, on October 21st and 22nd, we will also hold public information sessions at Pickering and Darlington to answer any remaining questions once the initial distribution is complete.

As I mentioned, online ordering of KI is also now available for those residences or businesses that

need additional tablets and after October 15 for secondary zone orders. Additional supplies of KI pills will be primarily through website orders. The existing participating pharmacies will also remain available to pick up KI pills in person.

Public polling is also planned post-distribution to get a measure of public acceptance and understanding. We will also continue to monitor social and traditional media and we will also use questions received at our call centres and information sessions to update the website Q's and A's as we proceed.

Over the next several years the website will remain available for website orders, and OPG, Toronto and Durham will continue to build awareness of the program.

Currently, a number of independent pharmacies in Durham are participating in the pre-distribution of KI and have been for a number of years as a public service.

Well before the expiry date of this batch of pills in 2027, new pills will be procured and distributed as required. Disposal of the expired pills is also something that will have to be considered to ensure as sustainable process as possible.

The requirement for the secondary zone or ingestion planning zone is to have sufficient KI ready for

prompt distribution. Six million tablets have been procured for the secondary zone stockpile and they will be stored at the Government of Ontario pharmacy located in the Greater Toronto Area.

The Office of the Fire Marshal and the Ministry of Health and Long-Term Care are preparing a plan for distribution that considers all the affected municipalities and there is a working group of the Office of the Fire Marshal and Emergency Management, the Ministry of Health, Durham, Toronto and OPG on communicating the pill availability in the secondary zone.

At the Darlington day two hearing in November we will provide an update on the distribution to the primary zone as well as the availability in the secondary zone.

Thank you for your time and with that I am happy to answer any questions.

***CMD 15-M43.2**
Oral presentation by the
Office of the Fire Marshal & Emergency Management
And the Ministry of Health & Long-Term Care

THE PRESIDENT: Thank you.

I would like now to turn the floor to the

Office of the Fire Marshal and Emergency Management and the Ministry of Health and Long-Term Care for their joint presentation by teleconference, as outlined in CMD 15M-43.2.

Mr. Kontra, over to you.

MR. KONTRA: Thank you, Dr. Binder.

Good afternoon, Commissioners. For the record, this is Tom Kontra from the Office of the Fire Marshal and Emergency Management.

I have with me Mr. Dave Nodwell and Kathy Bleyer from the Office, as well as Mr. Clint Shingler and Adam Miller from the Ministry of Health and Long-Term Care.

I would like to emphasize at the outset that, as our quarterly update to Dr. Binder from the Fire Marshal and Chief indicated, we are making good progress toward meeting REGDOC-2.10.1 as we have already heard both from the staff report and from the OPG report.

More importantly, it has been and continues to be a harmonious collaboration of all Ontario stakeholders, provincial, municipal and industrial.

I am pleased to assure the Commission of Ontario's continued support to nuclear safety in the province.

I will ask Mr. Nodwell and Mr. Shingler to now proceed with the presentation.

Dave...?

MR. NODWELL: Thank you.

Dave Nodwell, Office of the Fire Marshal and Emergency Management, for the record.

I would like to confirm that I can be heard.

THE PRESIDENT: Yes, you can. Go ahead.

MR. NODWELL: Thank you.

On slide 2 of the presentation we describe the purpose of the presentation in terms of some of the introduction, provincial context. We will be talking about the working group and the secondary zone KI strategy as well as challenges and mitigation.

I will be delivering this presentation in conjunction with my colleagues from the Ministry of Health and Long-Term Care.

If we could go to slide 3, please.

The Office of the Fire Marshal and Emergency Management, as Tom mentioned, provided an update to the Commission this past March and we would like to take this opportunity to provide further information and take a look at the milestones that have been achieved since we last met and future plans.

At the outset, I would like to express our appreciation for the tremendous work and the support that

has been received from our nuclear facilities, from the designated communities and partner ministries.

If we could go to slide 4, please.

In terms of the the provincial context, the PNERP details the offsite nuclear emergency management responsibilities and that includes detailed information related to KI pills, specifically that KI distribution is the responsibility of the designated municipality, further, that the nuclear facility is responsible for resourcing that municipal distribution.

In an actual emergency the administration of KI pills is at the direction of the Provincial Chief Medical Officer of Health and the details of that can be found in the Radiation Health Response Plan.

Slide 5, please.

It is important to put KI administration in the context of other protective measures outlined in the PNERP.

From an emergency management standpoint, evacuation, i.e. removing people before the onset of the hazard, is the preferred strategy in the PNERP. This is in contrast to sheltering in place, which has limited efficacy in KI administration which only protects the thyroid from longer-term stochastic effects.

It is somewhat regrettable that the KI

pills are being reported in the media from time to time as being anti-radiation pills, given that this is misleading. However, there is a lot of very good information being put out by our municipalities and other organizations that help correct this point.

Clearly, however, potassium iodide has a very important role, particularly for those unlikely events where members of the public could be exposed to radioactive iodine.

I will now pass the presentation of the next slide over to the Ministry of Health and Long-Term Care.

MR. SHINGLER: Thank you very much, Dave.

For the record, my name is Clint Shingler with the Ministry of Health and Long-Term Care.

So on slide 6, the Ministry of Health and Long-Term Care does play a supporting role to the Office of the Fire Marshal and Emergency Management in providing advice from a health perspective on potassium iodide and it does so through the KI Guidelines, which are one component of the Ministry's plan, the Radiation Health Response Plan, as Dave has mentioned.

The Guidelines provide advice on a range of topics, both in the planning and response phases, including the type of information that should accompany KI

pills, strategies to distribute and educate the public, information on the dosage, specific dosage and timing of administration, as well as health advice for specific groups on whether and how KI should be taken.

I will pass the floor back to Dave for the next slide.

MR. NODWELL: Slide 7, please.

As has been mentioned, the KI pill distribution working group comprised of provincial, municipal and facility representatives as well as the CNSC staff was first established in June 2013. This particular group supports the efforts that are being undertaken for the primary zone KI distribution strategy, which has been completed or near completed in each of the offsite response planning areas.

Post primary zone distribution, the Ministry of Health and Long-Term Care and OPG are working together on this initiative. The focus is primarily on a secondary zone distribution strategy that is consistent with REGDOC-2.10.1. This deals with placing KI in pharmacies and ensuring the long-term sustainability of the entire KI program.

Next, slide 8, please.

You have heard from the facilities about the detailed implementation, or some of them, in their

respective areas, but the strategy to distribute KI pills in each of the primary zones is tailored to reflect the needs of that particular area but also to ensure that the intent of REGDOC-2.10.1 is met. The strategy is multifaceted in nature and includes things such as the public education campaign, direct distribution, voucher redemption and direct mailout.

If we could go to slide 9, please.

The province is leading the secondary zone strategy that essentially has two components to it.

The first is the non-emergency program that will ensure that the population residing within 50 kilometres of nuclear facilities can obtain KI pills. Public education and communications planning to increase awareness of the availability is being done through website orders, an extension of the pharmacy program as well.

The second component is the emergency distribution program and this is currently under development. This strategy will ensure that KI pills are pre-stocked in the secondary zone and I am pleased to state that this is largely completed at this time. Work is also under way to develop plans for the prompt emergency distribution of KI and in this regard discussions are under way with suitably mandated agencies at the provincial and municipal level.

I would like to pass the presentation back to the Ministry of Health and Long-Term Care for a discussion of some of the challenges.

MR. SHINGLER: Thanks, Dave.

The KI working group work together to develop solutions to a number of questions along the way and the presentation from OPG did highlight -- did touch on some of these and some of the concerns that certainly came out of the focus groups, certainly regarding the availability and communication of appropriate information to the public before, during and after the pre-distribution campaign.

Respectively, these are being addressed by certainly a robust advertising campaign, and you have seen examples of that in the previous presentation and it has had some media uptake; info that has accompanied the product itself, and again you have seen examples of that in the last presentation; and, quite important to us, places that the public could go to address questions or particular health concerns after they have received their pills. Certainly, the Public Health Departments in Toronto and Peel are playing a role in this with their respective infolines and we have also asked Telehealth Ontario to play a role in this as well and they have agreed to do so.

I think these will go a long way in

helping to make the pre-distribution program stick and I look forward to the post-campaign polling results.

With that, I will turn it back over to Dave.

MR. NODWELL: Thank you.

Dave Nodwell for the record.

In conclusion, the province and its partners continue to work diligently to facilitate a KI pill distribution strategy and also to ensure the long-term sustainability of the KI distribution program.

The work of this distribution working group has been, I believe, very successful in meeting the requirements established within the province and the provincial role for KI distribution, but aligned with REGDOC-2.10.1.

As usual, President Binder, the OFMEM would be pleased to continue with regular progress updates to the Commission and that concludes our report.

THE PRESIDENT: Thank you. Thank you very much.

I understand that Bruce Power has a short brief.

MR. SAUNDERS: Yes. Frank Saunders for the record.

As you recall, we did provide a

presentation at the last Commission meeting on this. Just a quick update to kind of close the loop.

The 10-kilometre zone, as we reported then, was completed in August and that's done.

The out-to-50-kilometre zone, the pharmacies in that area have agreed to stock the pills and they have been provided with them. The information packages have been sent out to all the people in that area and the vouchers to pick up the pills should they desire. So the sort of regulatory portion of this has been met.

There are a couple of more actions that are just outstanding to close them out.

We have one last information session with the Saugeen Ojibway Nation scheduled in October which will occur.

And the school boards in the area have decided that they should adjust their emergency plans to include nuclear. So all the school boards within the 50-kilometre zones are currently just revising their emergency plans to include that.

They have asked that we stock KI pills there and we have agreed to do that and they have sent information packages and permission slips to the parents. So there will also be stocks and supplies at the various schools in that 50-kilometre area that people could draw

upon too if they wished.

We considered that kind of more of a good practice than an actual regulatory requirement. If you recall, we had a couple of intervenors who asked those kind of questions at our hearing. So it just seemed wise to answer the question and make sure people were comfortable with what the situation was.

That's it.

THE PRESIDENT: Thank you.

So unless there is anybody else who wants to give some short update, why don't we open up the floor for questioning, starting with Ms Velshi.

MEMBER VELSHI: Thank you, Mr. President.

I will start with OPG, maybe OFMEM may want to add to it, but it is around -- before I even get into that, I do want to complement and congratulate all of you involved in this. This must be a really major undertaking and you have done it very thoughtfully, thoroughly, and the collaboration bodes really well for handling an emergency in the rare event that we have one.

So having said that, it is post-distribution. You talked about doing polling to check about acceptance and understanding. Are there plans to do something more long term, maybe two years or so from now, to see if people are still holding onto their pills and

know what this is all about?

MR. POWERS: Kevin Powers for the record.

We plan on having this year -- or the polling that follows this distribution will be our baseline polling and we plan to continue that year after year after that.

MEMBER VELSHI: Thank you.

And Bruce Power, anything similar planned?

MR. SAUNDERS: Yes. We actually have set up for -- we will do an information blitz each year in May and during the emergency preparedness week, and we will be mailing out again to all local residents. And during our normal interactions with those communities, we will sort of poll and check to see whether people still have them, know where they are and so forth.

MEMBER VELSHI: This very major outreach effort, have there been more secondary benefits of this on people better understanding nuclear power, nuclear emergencies and risks, or is that hard to tell?

MR. SAUNDERS: Frank Saunders for the record.

I think it's hard to tell. I think for those that came out to the information sessions I think it was helpful because we showed people a number of things about radiation that I suspect they didn't actually know or

weren't aware.

It was rather unique. One of the tests is you fill up a balloon at the start of the discussion with air just out of your lungs and hang it there and then check it with a metre at the end after the radon in the atmosphere has had a chance to decay and you see how much activity is in it. So it just helps people to get used to the idea that there is a certain level of radioactivity that we live with day in and day out, in fact probably couldn't live without, and so I think it makes people generally more comfortable.

But the turnout at the information sessions is quite small. So are you reaching a large amount of the population? I'm not sure.

Within the 10-kilometre zones, we know that 20 percent of those people are our own workers, so we are pretty comfortable that they are aware and know and understand.

And we did a lot of door-to-door on the seasonal residents. So at least they got a chance to hear from us about the plant. They may not know otherwise.

But there is no way of measuring whether it is truly positive impact or not.

MEMBER VELSHI: OPG...?

MR. POWERS: Kevin Powers for the record.

In the focus groups that we had we were happy to see that there was an awful lot of remembrance of our past initiative, which was a flashlight brochure around emergency preparedness. We would expect similar recall and halo benefits from this distribution but we will find out and be able to quantify that once we have done the polling.

MEMBER VELSHI: Thank you.

THE PRESIDENT: Monsieur Tolgyesi...?

MEMBRE TOLGYESI : Merci, Monsieur le Président.

Once this distribution is complete, is there a follow-up monitoring process to verify efficiency and accuracy, I mean who receives that, they know the purpose, how is it stocked? Because you could receive pills and I will put them somewhere and my wife and kids, they don't even know what's happened. So do you have any follow-up monitoring process to check what is the accuracy and efficiency?

MR. SAUNDERS: Frank Saunders for the record.

We don't have anything formal in our area and it's mostly because of the low population. We do have meetings each summer with all the local residents around the plant anyway, at least as many of them as will come out to a meeting. It gives us an opportunity to do that.

We do plan to do information sessions again, as we talked about, in May and so forth to reach out to people. But with sort of the small population numbers, it's hard to get much more than a feel for it, right, because the sample size is small.

We will do our best to make sure we keep doing the information sessions every year and pull people in and include it in our normal meetings with the community to keep broadcasting the message.

You know, polling in small samples like that really doesn't give you an accurate picture, unfortunately, for our area. It works more effectively in the large population centres but not so much in ours.

MR. POWERS: Kevin Powers for the record.

We do hope that the quantitative polling that we will be doing after this distribution will give us a sense of that. We are also looking at follow-up communications programs around this to help us continue to communicate about this but also to hear back from the population around this.

THE PRESIDENT: The Ministry of Health, do they have any responsibility for follow-up? I'm trying to figure out who is really responsible for monitoring this. Are they aware of the local municipalities, of the Office of the Emergency Management and Fire Marshal and the

Ministry of Health and you guys? Have you decided in committee who is going to do the follow-up or is it left to each agency to do their own thing?

MR. KONTRA: Tom Kontra for the record, Dr. Binder.

I think, as we indicated, our working groups include a particular public education working group where all of us participate, and certainly from the provincial perspective we will continue that public education aspect and I think that is the best way of ensuring that this is not a flash in the pan of one distribution and forget.

Each of the facilities has already indicated that they have plans to follow up but I think if we push the provincial public education working group on this, perhaps the best time, as Mr. Saunders indicated, could be every year in EP week. As a subset of that year's theme, it could be nuclear in those particular areas.

So this has been discussed at the public education working group and I think it's in everyone's mind as to how we follow up on this.

THE PRESIDENT: Thank you.

Monsieur Tolgyesi...?

MEMBER TOLGYESI: This KI pill distribution strategy, is this used also elsewhere, like

say in France or in other places where there is a large population, and do they have a similar approach?

THE PRESIDENT: Staff, you did some benchmark on this.

MR. AWAD: Yes, we did. Actually, it's Bernie Beaudin did it. Bernie, please.

MR. BEAUDIN: Yes. Bernie Beaudin for the record. I'm an employee of the Emergency Management Programs Division.

We did some benchmarking and in particular we focused on countries like Germany, France and Great Britain, and they all have very different ways of doing this.

For example, France did a mass mailout and they had some special organizations where they have focus groups and information sessions as well. But they are all pretty different as far as it goes. Even in the U.S. it's the same type of thing. Some States have it and others don't.

MEMBER TOLGYESI: Do they measure, do they have a follow-up monitoring process or they don't have anything like that?

MR. BEAUDIN: They do measure. As a matter of fact, they have pretty elaborate databases as to how they keep track with the families. Because, as you can

imagine, there are people moving in and out, so that's something they have to take account of. So they do have good methods of recording this type of data.

THE PRESIDENT: Thank you.

Dr. McEwan...?

MEMBER McEWAN: Thank you.

As I was looking at slide 6 of the CNSC -- I'm talking about the Ontario strategy -- in the post-secondary zone your talk about pre-stocked potassium iodide for a sensitive population only, pregnant and breastfeeding women.

That is variable from year to year. How do you ensure that the appropriate individuals have the tablets and how do you ensure that you know they have them?

MR. AWAD: I think the best suitable answer could come from Ministry of Health and Long-Term Care. They are online with us.

THE PRESIDENT: Ministry of Health...?

MR. KONTRA: Tom Kontra, for the record, from OFMEM.

The secondary zone requires at the moment to have a stockpile available and the stockpiles that we have foreseen grossly exaggerate the reserve numbers so that it is not strictly for this year's vulnerable, which we recognize as being a changeable number, and we will

continue to look at every record possible as to what percentage of the given population is considered to be vulnerable in any given year.

So we are not thinking that there are 800 needed and we have 100 tablets. We have over-exaggerated the reserve so that all those people who are not vulnerable but who wish to avail themselves are also able to avail themselves in that secondary zone. So we do have sufficient reserve for the fluctuations.

MEMBER McEWAN: So there will be no thought given to making the tablets available to women at prenatal visits so that there was a guarantee that that particular vulnerable population was protected?

MR. KONTRA: Again, Tom Kontra for the record.

We are talking -- the current plan focuses on doing the distribution for the primary zone and we are going to continue to take steps to improve whatever we have in the secondary zone. We are looking to meet the REGDOC immediately and then we will continue to look at what is reasonable to proceed with.

MEMBER McEWAN: Okay. And so just one more question on contraindications. Is there any population that should absolutely not take it? Because I don't see something as straightforward as that, "If you

have such you should not take these."

MR. SHINGLER: Hi. For the record, it's Clint Shingler with the Ministry of Health and Long-Term Care.

That is correct, there are populations that should not take potassium iodide. There are clinical contraindications to the administration of KI. Those are outlined in the Ministry's KI Guidelines.

To give you a sense of a couple of examples, persons with hypersensitivity to iodine and myotonia congenital, for example, an extremely rare congenital defect involving muscle stiffness, and there are a couple of other medical examples like that of individuals where it is contraindicated.

MEMBER McEWAN: Yes. There is no absolute, though. You know, there is a comment to consult your doctor, which would be very difficult in an emergency. My question is: Is there any condition that would require you to put in the guidelines a statement that if you have this you should not take these?

MR. SHINGLER: So the conditions that I provided examples of is one of the questions in the potassium iodide fact sheet that has been made available and is under the question, "Who should not take KI," and the conditions are listed there.

THE PRESIDENT: I assume that people should be told don't wait for the emergency, check out right now whether you are one of those populations that cannot or should not ever take KI pills?

MR. SHINGLER: Again, for the record, it's Clint from the Ministry of Health.

I agree with you and that is why we felt so strongly about the information campaign pre-, prior to, during and after distribution.

THE PRESIDENT: But still on the issue of a vulnerable population, are you not -- let me understand. In the secondary zone, are you not going to supply to all schools, I don't know, hospitals, a supply of KI pills?

MR. KONTRA: Tom Kontra, for the record, from OFMEM.

We are working out the strategy of where to stockpile. We are considering all the possibilities. We are also considering what are the likely places that people are actually going to be present or not in a given emergency situation.

In other words, if you are in a rural area, the fire hall, is that the best place, because if an emergency happens they are going to be out looking after things and nobody is going to be at the fire hall.

So we are considering all the

possibilities and we are looking to have the best locations in each of the areas that we are concerned with.

THE PRESIDENT: So you have not yet finalized the secondary zone distribution details?

MR. KONTRA: Not yet. The only one, I think, at the moment is Bruce that has done so.

THE PRESIDENT: Okay. Thank you.

Monsieur Harvey...?

MEMBRE HARVEY : Merci, Monsieur le Président.

Monsieur Awad, vous avez mentionné au départ, pour Hydro-Québec, Hydro-Québec rencontrait les exigences, mais que dorénavant, étant donné qu'Hydro-Québec, le réacteur était fermé, qu'il n'y avait plus de problème. Est-ce qu'il serait approprié ou nécessaire d'aviser ceux qui avaient reçu des pilules, soit qu'ils n'en ont plus besoin, de s'en départir ou de...?

M. AWAD : C'est Raoul Awad pour l'enregistrement.

Je dois faire le suivi avec les autorités provinciales. En fait, je crois, si ma mémoire est bonne, après la fermeture de Gentilly-2, il y a eu une communication des centres de mesures d'urgence dans la région de Bécancour et Trois-Rivières pour enlever les tablettes d'iode, mais je dois vérifier ça. Je peux vous

revenir avec la bonne réponse.

MEMBRE HARVEY : O.K. J'apprécierais ça.

Another question in English now.

--- Laughter / Rires

MEMBER HARVEY: Mr. Powers, at the beginning of your presentation you mentioned that people were asking why are you doing this now -- what was your answer -- not 30 years ago?

MR. POWERS: Kevin Powers for the record.

The answer that provided the most assurance to people was that it is increased safety standards.

MEMBER HARVEY: Why not 30 years ago?

MR. POWERS: Kevin Powers for the record.

The easiest way to explain that is in the same way that helmets while riding bicycles were not common practice 30 years ago and are now, in the same way KI pills are now considered common practice.

THE PRESIDENT: But correct me if I'm wrong, they were always available, this was about more efficient distribution. Before, they were available through some designated pharmacies. What this does, it brings it right into the home. Isn't that the correct answer?

MR. POWERS: Kevin Powers for the record.

That is the correct answer. However, the public understands this most easily as there being higher safety standards and so rather than having them available at pharmacies they are now at your doorstep.

THE PRESIDENT: They increased efficiency, yes.

M. AWAD : Monsieur le Président, si je peux ajouter quelque chose pour Hydro-Québec.

J'ai eu la confirmation de monsieur Jamal qu'Hydro-Québec a déjà avisé les autorités provinciales, et ça fait partie aussi de nouveaux permis de... decommissioning licence.

THE PRESIDENT: Ms Velshi...?

MEMBER VELSHI: Thank you.

Mr. Kontra, I think it was last year when we had this update, we talked about the information being available in languages other than English. Is that still in the plans?

MR. KONTRA: Tom Kontra for the record.

Any provincial information that we issue is automatically issued in both official languages and we are still considering whether other languages, particularly in the area of Toronto, are required.

MEMBER VELSHI: So this package that OPG has shared with us and the booklet in there, that is in

English. So is that going to be available in other languages? Is that what's on the website? Maybe, Mr. Powers, you can answer that.

MR. POWERS: Kevin Powers for the record.

Right now, it is just available in English.

MEMBER VELSHI: And are there plans to make it available in other languages?

MR. POWERS: Kevin Powers for the record.

We are listening -- we have a number of different ways we are listening to the public to find out whether there is a need for the information in other languages. We have to date not received any requests to have it in any other language than English but we remain open to that idea.

MEMBER VELSHI: My second question, also for you, OPG. On slide number 4, on public attitudes, you said 85 percent of the population said they are open to having them mailed out by authorities. What about the remaining 15 percent and how are you accommodating that?

MR. POWERS: Kevin Powers for the record.

In any given population, you will have a group that will be resistant to the idea. In this case, it is that 15 percent. They will still be mailed the package. If they do not want to have it, we are happy to provide

them with instructions on how to dispose of the package.

MEMBER VELSHI: I'm sorry. Is it that they didn't want it mailed or they just don't want the pills? I thought it was just maybe they wanted to go to the pharmacy and pick it up or order it on Web. Is that what the issue was with the 15 percent?

MR. POWERS: In most cases for that 15 percent, it was that they didn't want them at all.

MEMBER VELSHI: Ah, okay. Thank you.

THE PRESIDENT: Monsieur Tolgyesi...?

MR. TOLGYESI: Is there somebody from Point Lepreau? Nobody?

MR. AWAD: I don't think Point Lepreau is participating because they already meet the requirements.

MEMBER TOLGYESI: Yes, I know. That's why I wanted to ask if they have any -- you know, they have been doing that for a long time, so if they have any follow-up experience with the measures. So if they are not here, they cannot answer.

MR. AWAD: Mr. Bernie Beaudin is following up always with New Brunswick. They are doing this campaign almost yearly to verify if the population still has it, I think during the emergency week. And the follow-up is very effective in New Brunswick but you have to understand that New Brunswick is a very small population compared to other

facilities. It is very easy to do and usually they are doing it, I think, door to door.

MEMBER TOLGYESI: And my second question is that when you are looking at these documents to explain, they are of some length, and so lots of people in general, I don't know to what extent they read these long documents. But my specific question is what are the challenges to handle persons with lower literacy? Because the question is lower literacy, the question is also language, you know, but I'm talking about lower literacy.

MR. POWERS: Kevin Powers for the record.

In the event of lower literacy, we have made available a number of phone lines for people to contact, either the 3-1-1 number in Toronto, there is the phone number at Durham as well as Telehealth Ontario for those who may not understand the package or want to know more.

THE PRESIDENT: Dr. McEwan...?

MEMBER McEWAN: I'm okay.

LE PRÉSIDENT : Monsieur Harvey...?

MEMBER HARVEY: One last question. It's about CNL in Chalk River. Were there any Quebec residents in the 9-kilometre zones, and, if so, did they receive the package?

MS FISHER: This is Kathy Fisher from CNL.

So there are 51 registered properties within the primary zone in Quebec. They are all seasonal. There are no permanent residents. We continue to work with the municipality on getting the package put together. The plan is for them to have it out in the near future, aligned with what is happening in Ontario.

MEMBER HARVEY: Thank you.

THE PRESIDENT: Sorry, what -- did you design your own package or are you using -- which package are you using?

MS FISHER: Kathy Fisher for the record.

So we are using the information that has been provided by the Province of Ontario and the Ministry of Health as well as information that was developed for the communications through the G2 area, and so the packages when they go out will be in both French and English.

THE PRESIDENT: Okay. Thank you.

Ms Velshi...?

Monsieur Tolgyesi...?

MEMBER TOLGYESI: No.

THE PRESIDENT: Dr. McEwan...?

Okay. Well, all I can say is that I knew that when you get together, all the parties, good things will happen. Very impressive progress.

I have only one question. When can we

declare success? Remember, we said end of 2015. Are we still on target to meet this by 2015 and declare success? Is that right?

MR. SAUNDERS: We already declared success at Bruce, so yes.

--- Laughter / Rires

THE PRESIDENT: I thought there was some work still being done and some plans are still being contemplated, particularly for the secondary zone. It may not have been part of the target for this but it would be nice.

Because we are going to ask -- emergency management is going to be an ongoing topic in all our hearings and for some of you who I know will be with us in November for the Darlington, it is going to be a hot topic. So it would be always nice to show progress along those lines. So I hope that we will continue to show progress.

MR. KONTRA: To answer your question, Dr. Binder, you have to define success, but I would suggest that every day of safe nuclear operation we can declare a success.

THE PRESIDENT: I wish it were that easy. But thank you for that and thank you for all the effort and we will reconvene in --

--- Pause

THE PRESIDENT: We will take a five-minute break to allow you guys to set up. Thank you.

--- Upon recessing at 2:40 p.m. /
Suspension à 14 h 40
--- Upon resuming at 2:49 p.m. /
Reprise à 14 h 49

THE PRESIDENT: So first of all, let me thank you one more time for being flexible and staying with us. We will resume our discussion. We still have -- we still have people online so maybe verify again that Canadian Light Source is still with us?

Canadian Light Source...? Mr. Cubbon...? We hear noises but we can't hear any voices.

TRIUMF, are you with us?

MS **TRUDEL:** Yes, we are.

THE PRESIDENT: Okay, thank you.

So weren't we -- where were we on the question period? Anybody remember? Oh, we were just going in around here.

So we'll go -- but he is not available.

Mr. Cubbon...? Light Sources, if you can hear us, you can link on anytime. Just give us a signal.

So we are going back and we are dealing

with our guests, the two intervenors here.

Mr. Harvey...?

MEMBER HARVEY: My question is not (off microphone). I can wait if you want.

THE PRESIDENT: I think we would like to deal with the two intervenors so they can go home. Staff can stay here a little bit longer. Yeah.

--- Laughter

THE PRESIDENT: So we are dealing with the interventions right now.

MEMBER HARVEY: Okay. I'll give them -- I'll give my turn and I'll come back.

THE PRESIDENT: All right. Go ahead.

MEMBER McEWAN: So as a hook for this question, slide 6 from CRPA, and I think we might have -- so I found this very useful. So thank you, because I think it is very good to see the number of different licence types for which the licensees have to apply.

And if I take just within the commercial group, and I want to come back to that later, it seems to me that a university or a facility that is running a cyclotron for the production of PET radioisotopes can be applying or maybe should be applying for six different licences; cyclotron PET, nuclear medicine research on human subjects, diagnostic nuclear medicine procedures, medical

accelerator, distribution and processing.

So am I right in my understanding that a single facility could end up with conceivably six licences if they had to apply for all of those and what is the impact on that in the regulatory environment and is it an appropriate regulatory burden to put on that type of a facility?

MR. MOSES: Colin Moses, for the record.

I think that question is very apropos. In our presentation in the report we made reference to some of our efforts to minimize the administrative burden on licensees and a big part of that is developing consolidated licences and making those available to those sorts of facilities that might have multiple different use types.

So I don't believe they listed it on the slide but we do have specific use sites that can accommodate multiple different types of uses and so that we can issue a single licence, require a single reporting and cover a broad range of activities than -- a broader range of activities than what would be listed there.

MEMBER McEWAN: I am going to come back to that but does CRPA or COMP have anything, comments on that?

MR. SHOUSHTARIAN: Ali Shoushtarian, for the record.

At the Ottawa Hospital we have like about

10 licensees -- licences; diagnostic, therapeutic, cyclotron servicing. So it becomes a burden because one person has to -- for the ACR, for example, they have to do four different ones for example, for diagnostic and therapeutic or servicing. So there is each one that they have to apply for or send for your ACR.

But if that was all consolidated into one, that would have been -- it would have helped the licensee to lessen the burden on administration.

MEMBER McEWAN: Does COMP have any...?

DR. WILKINS: Yeah, for radiation therapy facilities, the Class II licences, there has been a consolidation effort for a while. So there was a time when our facility had, I think, a maximum of seven licences and we are down to two through consolidation and there is an option available to consolidate further to one single licence. So that has been very helpful to reduce the administrative burden a bit.

DR. SCHREINER: And another feature of that -- John Schreiner for the record -- is that I think the period of these licences has been extended considerably also. So we have gained from the consolidation but we have also gained that we are not renewing as often. So that's been a very nice effort from the CNSC.

It did take a bit of paperwork. It did

take a bit of organization on our part but, again, staff -- we are also a Class II facility -- staff in the Class II group were very helpful in helping us work through all the hoops. So it was very good.

MS MURTHY: Kavita Murthy, for the record.

For several years now for the medical facilities we have issued consolidated licences. Recently we added the possibility for consolidating cyclotron licences.

So, Dr. McEwen, to your question there is -- the cyclotron operations that fall under the Class II jurisdiction there is only -- there can only be only one licence which allows you to operate and service the cyclotron.

The part that is related to nuclear medicine, I'll have Peter respond to that.

MR. FUNDAREK: Peter Fundarek, for the record.

With the licence application guide that we have for nuclear substances and radiation devices licensing, there is a section in there that allows them to apply for more than one use type, using the one application form. So they can indicate the different use types that they are applying for, more than one use type on a single licence application. They just have to define the

information that's provided in the application according to the use type that they are supplying. But it's one application form that contains all the information required.

THE PRESIDENT: I don't get it, though.

In hospital, in the Ottawa Hospital there -- right now there are 10 licences and the question is does it make sense to consolidate? And again, it's not only the licences. It's the governance model here. Is there one licensee with the power to oversee and be responsible and accountable for that licence?

MS MURTHY: Kavita Murthy, for the record.

For the cancer centres, for the entire cancer program there is one licence.

THE PRESIDENT: So where are the other nine?

MS MURTHY: I believe those would be in research and labs.

MR. SHOUSHTARIAN: In diagnostic servicing, human licence groups -- human servicing and cervical and diagnostic, to name a few.

THE PRESIDENT: So do you really want to have one licence with one individual in charge of all the activities?

MR. SHOUSHTARIAN: No, we just -- the good

thing for consolidating is the diagnostic and therapeutic or human studies into one that would make sense to make and consolidate those into one licence.

THE PRESIDENT: So I think what I hear from staff is all you have to do is apply and then it will be considered.

MR. FUNDAREK: Peter Fundarek, for the record.

There is a separation between diagnostic and therapeutic licences and there is also a separation with the human research because the licence conditions on each of those licences specify unique requirements for each of those types of licences and it wouldn't be useful for the licensee to have, for example, some of the more restrictive requirements of a human research licence that would apply to all their operations there. So we are tailoring the actions directly to the types of activities they are conducting in the locations that they are acting, so that they don't have unnecessarily restrictive actions on all their operations.

THE PRESIDENT: Well, that's very nice for you to think what's good for them but if they actually come in with an application that makes sense. We should allow them to make their case.

MR. MOSES: Colin Moses, for the record.

Absolutely, I take that feedback and we can look at how we can accommodate those kinds of requests in our licensing.

THE PRESIDENT: Right, if it makes sense. Just be careful what you wish for.

We have some experiences where consolidation -- particularly in a university setting recently we had some bad experiences about having a provincial authority overseeing what is going on in every university and then nobody was in charge. So again we are open to you making the case.

DR. SCHREINER: Thank you.

THE PRESIDENT: Dr. McEwen...?

MEMBER McEWAN: I think my follow-on question is --

THE PRESIDENT: Sorry. Before we are going to lose the Canadian Light Source, I understand that they are now on.

Mr. Cubbon, are you on the line?

MR. CUBBON: Yeah. For the record it's Grant Cubbon here from the CLS.

THE PRESIDENT: Okay. I think there were a couple of questions designed for you to help us understand before you leave. Dr. McEwen and Monsieur Harvey...?

Dr. McEwen, go ahead.

MEMBER McEWAN: Thank you, Mr. President.

So this is really a question for CNL, TRIUMF and for staff. So you have been undertaking research in both organizations that sort of takes you away from your primary research mandate and into a mandate which is effectively that of a producer of radioisotopes for distribution. How will your licensing structure -- how will your radiation safety structure, your licensing and regulatory framework, deal with such a major change in the way in which the facilities are operating?

MR. CUBBON: Oh, Grant Cubbon here for the CLS.

From our perspective, I mean, we have two separate licences and really have two distinct operations although we share a lot of the personnel. So for us the current licensing situation is acceptable and, I think, a good idea that we have a Class II licence for our linear accelerator for the medical isotope project and then a Class 1A licence for the synchrotron facility.

So we have applied and received that licence and we are operational right now and we are in 2014.

MEMBER McEWAN: Thank you.

MS MURTHY: Kavita Murthy, for the record.

So your question was how does the fundamental change in the nature of their operations impact how we licence them? At this point in time CLS is not producing and distributing commercially. They are operating under the research and development of Class II prescribed equipment licence.

When they get to the point where they are actually going to start contemplating distribution we would have to look at the licensing model we have and determine whether they need to stay under a Class II isotope production accelerator licence and how we would handle the distribution aspects of their operations.

With respect to TRIUMF, I believe TRIUMF has been producing isotopes and they have an agreement with Nordion and they have handled that on their site under a separate arrangement.

THE PRESIDENT: Monsieur Harvey...?

DR. TRUDEL: Sorry. This is Anne Trudel from TRIUMF for the record.

As Kavita Murthy has pointed out, we do have a license currently to produce radioisotopes and then with Nordion on our site they have their own licence for the radioisotope processing.

THE PRESIDENT: Okay. Any other questions to CNL right now -- CLS, sorry.

Okay. Mr. Cubbon, thank you. If you have to leave we'll understand.

MR. CUBBON: Thank you very much. Yeah, unfortunately, I have another commitment. Appreciated the time to listen in, though. Thank you.

THE PRESIDENT: You're welcome. Good bye.

MR. CUBBON: Bye.

THE PRESIDENT: Back to Monsieur Harvey. Can ask --

MEMBRE HARVEY : Merci, Monsieur Président.

Well, when we receive that documentation and I have got the French and the English version, first I read the French version for many reasons, the first one being that it's easier for me. And after that I go to the other one and normally it's very consistent. But that time I did enter into a problem with figure 35 in the French version. I tried to understand. There was no flag there. You know, there is so many figures and it's very interesting now -- so many figures that sometimes you go directly to the figures and if you understand the figures you don't even read the text.

But I was trying to find a solution and understand that figure and I have been obliged to go to the English version to see that there was an error right in the

top of the figures with the limit of the dose. In French it's 70 and in the English version it is 63.

That's right, 35. So there was an error. The limit was not 50 but 500. So I was surprised to see that there was a number of over -- between 100 and 200 when you look at the dose at the bottom of the figure.

Yeah, extremity dose, yeah. And the limit was not 50 but 500.

So I think the answer was the page before at the bottom but I thought this text was linked to the other one because we can read: "...parce que les travailleurs du secteur nucléaire doivent manipuler avec leurs mains les substances nucléaires," c'est pour ça que c'est 500 mSv.

I just want first to underline that thing and you can adjust it.

But you got it? No, it's just a small error.

But that -- touching that I will just ask the question about that 500 mSv per year because the text -- because the workers work with their hands. But is the 500 days because they work with their hands or there is other -- well, other things to support than that fact that we can have 500 mSv per year? Is it based on something else than just the fact that they work with their hands?

MR. MOSES: Colin Moses, for the record.

First of all, thank you for picking up on that. We will make that correction in the final report.

With respect to the dose that is the extremity dose. I think that is reflected in the *Radiation Protection Regulations*. Maybe I will turn the answer over to Ms Caroline Purvis to speak to sort of what that dose limit is based on in the *Regulations.*

MR. RICKARD: Melanie Rickard, for the record from the Radiation Health Sciences Division.

Yes. So that dose limit is the dose limit for equivalent dose to the skin so it's quite different from the effective dose limit which is 50 for an NEW in a year.

This limit is really to prevent the deterministic effects to the skin so it's far below the threshold where we would see any effect and it's a different quantity, excuse me, than the effective dose limit. So we are not comparing apples to apples here. They are two different quantities which is why it can be higher than the 50.

MEMBER HARVEY: Okay. Thank you.

Just maybe that would be a good thing too because in that case the explanation was not on the same page than the graph, than the figure. So if it is possible

to put the explanation with the figure it would be -- well, that's a proposition and if it's possible to.

THE PRESIDENT: Ms Velshi...?

MEMBER VELSHI: Thank you. I had also some suggestions for the written report for your consideration.

One is, I think, in the executive summary it would be helpful if there was some comment on what the improvement trend has been over the previous year. I know all the sectors are so different that you can't make one comment but some indication on are things improving or not.

The other one was on page 22 of the report where there is a discussion of the two events where workers received greater than the annual dose limits for non-NEWs where you said:

> "Neither situation resulted in immediate health consequences to the workers."

So it's both immediate and long term. You are not expecting any consequences. And I think adding a comment on that would be helpful as well.

And then on page 74 the second-last paragraph says:

> "In 2014 safety performance ratings for the two high energy research

particle accelerator facilities rated either satisfactory or fully satisfactory in all 14 SCAs evaluated."

And that's not correct. There were two below expectations. So you want to correct that.

The other point was it actually came up in our discussion yesterday with uranium and nuclear substance processing facilities where we were talking about conventional safety and it was with Best Theratronics that were licensed by the *Nuclear Substances*, under that regime. And there was a comment made that lost-time injuries the licensee was not expected to report to the CNSC on that.

I just wanted to get confirmation that that is indeed the case and, if so, why would we not want to know about lost-time injuries?

MR. MOSES: Colin Moses, for the record.

Yes, that's correct. Most of the industries are regulated under provincial jurisdiction and so the provincial jurisdictions do have the health and safety provisions in place with the associated reporting requirements.

With that said, when our inspectors are out in the field and they are reviewing the performance of these facilities they are looking at the overall

performance and they are looking at a number of indicators that would reflect either on radiation safety or conventional health and safety. So for example, in the operating performance area they are looking at procedural adherence. They are looking at good safety culture, the training of the employees. So a number of those factors do relate to conventional health and safety as well as radiological health and safety.

But with respect to the specific reporting provisions you are correct. Our reporting provisions are embedded in the *Regulations* and generally those are related to occurrences or near misses related to their radiological activities.

MEMBER VELSHI: But, you know, conventional safety and using lost-time injury, I mean, it's almost a universal indicator of how robust the program is. I'm just surprised that you wouldn't expect a reporting of that or at least as you're looking at assessing the different SCAs that you look at that specifically. So again, something for follow-up on those.

MR. MOSES: Thank you. And just for precision, I understand that Triumph and CLS both do report their lost time injuries to us.

MEMBER VELSHI: Right. So it wasn't for them. It was maybe some of your other, smaller licences.

This was with Best when they were under you.

Thank you.

THE PRESIDENT: Dr. McEwan?

MEMBER McEWAN: Thank you, Mr. President.

I hope I have my math right, but if I just look at the academic and the -- if I look at the academic and the medical sectors, it accounts for about just over half of the licences, I think, and presumably there is then something of the order of something between two and four hundred licensees reflecting those 1,200 or so licences. And yet when I add up the numbers that we have from CRPA and from COMP, it looks as if only 90 or so of the RSOs either have the CRPA-R designation or are COMP members.

So does this mean the other RSOs do not have any accepted qualification to be doing their jobs?

And a secondary question that worries me for these large complex organizations like hospital systems and university systems, my impression is that there is a very, very variable standard of reporting up within those organizations and to whom the individual RSO will report. And I think we've seen a couple of times when that has led to issues.

So could somebody help me understand how one becomes an RSO in a hospital? Are there any requirements for training, and should we actually be

looking to the RSO being either CRPA-R or a COMP member?

Sorry. That was a long, complicated question.

DR. SCHREINER: John Schreiner, for the record.

I think, historically, things have changed considerably, but -- and recently, there are now -- in fact, there is documents in the Regulatory Documents on the certification of Radiation Safety Officers.

Traditionally, in Class 2 cancer centres, there has been -- I don't think it's official, but there has been, usually, a desire to make sure that the RSO is a member of COMP, actually, more specifically, certified by the Canadian College of Physicists in Medicine, so many of the Class 2 RSOs are.

In some of the provinces, not all RSOs -- although they are well qualified and well trained, might not be COMP members in some provinces, and particularly in Quebec, not all of them are members of COMP. They would be members of the Quebec Association.

But in -- I know it's become much more formal and I believe now, for an RSO to be considered, they are actually interviewed and I don't know if examined is the correct word, but practically examined by staff at the CNSC before they're accepted.

So there is a formal way -- one cannot just name oneself or an administrator cannot just name somebody an RSO in a Class 2 facility, as far as I'm aware.

MEMBER McEWAN: In a Class 2 facility, but in the other facilities?

MS NERETLJAK: Tanya Neretljak, on behalf of CRPA, for the record.

Yes, your comment is absolutely correct.

So there hasn't been a universal accepted certification for RSOs other than in Class 2 institutions, and the CRPA has been advocating for this as a necessity. And there has been a very gradual cultural shift when people are looking for RSOs to represent licensees at, for example, academic or research facilities that now there is requirements and we're trying to embed that more into these requirements saying that if you have this competency, it would be better. But there hasn't been a uniform consensus that you must have a certification in order to be an RSO.

And there's also nothing in the Regulations for the qualifications specifying that you need a certification currently unless you are in Class 2.

MEMBER McEWAN: So does staff have a view on that?

MR. FUNDAREK: Peter Fundarek, for the record.

When we evaluate the Radiation Safety Officer for any of our licensees, we're looking to see that they've got a combination of skills, knowledge and experience in dealing with the materials that they're going to be working with. They have to be aware and cognizant of the requirements of the CNSC and the regulatory requirements under which they're going to be working.

So we do evaluate the Radiation Safety Officers and their capacity to undertake the function that they're going to do. As part of that evaluation, as part of their designation, they are -- they have to be designated directly by the applicant authority, which is a senior member of the administration at that location where that work is going to be carried out.

So we look to see that the -- well, they have to have the applicant authority sign off on their designation as a Radiation Safety Officer and we also look at the management structure to ensure that there is a clear reporting line between the Radiation Safety Officer and the applicant authority to ensure that the Radiation Safety Officer can elevate issues that are identified.

As part of the acceptance of the role of an applicant authority, the applicant authority has to certify that they have access to sufficient resources, both time and money, for the Radiation Safety Officer to do the

work and also that they have access to human and financial resources in order to carry out any requirements for improvements that may be identified as a result of an incident or an inspection.

DR. SCHREINER: If I might add -- John Schreiner, for the record.

With the advent of the monetary penalties, I can say unofficially from discussions with colleagues that they are looking at their own situation occasionally, and I suspect we are going to get to the day where people who are not qualified will perhaps step down because they will feel they are at risk and turn it over to people who are more qualified.

I know in our team, even -- because we function as a team in my hospital. I'm, in fact, also the RSO for nuclear medicine, which is an interesting -- has been an interesting learning experience, and I've enjoyed it. But I have a team of colleagues, including very good nuclear medicine technologists, very good physics assistants who can help me. And some of them have been very nervous, I will say, about their role with the advent of administrative monetary penalties because they feel that they are often doing this job, along with many other jobs that they are doing, and they worry that one day they will be held to account personally for things that they've been

advocating to improve but perhaps have not improved.

This is a side issue, but I thought I'd -- it was an opportunity to bring it up.

MEMBER McEWAN: So I'd like to go back to staff because I think I didn't really get an answer to my question.

You stated that you will review the qualifications, but if there is no generally accepted designation that would give you confidence that those expectations are fulfilled, I'm not sure that you answered my question of whether or not we should be looking to move to some more formal expectation.

The second question is, what is your expectation of a direct line to the applicant authority within a large administrative organization and how do you ensure that that is, indeed, the case?

Some of these organizations, I'm guessing, could be quite sclerotic in terms of the way they're structured.

MR. FUNDAREK: Peter Fundarek, for the record.

When we're looking at the licence applications that come in to my group, for example, there are approximately 60 different use types. As you can see on the slide that's given by the CRPA, there's many more

than this. And they differ in terms of the risk ranking -- or the risk significance of the activities that are being performed.

So what we do is we balance the requirements for the RSO against the risk ranking for the position.

Our expectations, for example, for a Radiation Safety Officer for an industrial radiography company are going to be much, much greater than for the Radiation Safety Officer for a company that handles an x-ray fluorescence device, which is essentially a simple tool for analyzing metals that come into a scrap metal dealer, for example.

So we do have a range of responsibilities for Radiation Safety Officers, and when we receive an application for a designation of a Radiation Safety Officer, we look at that person's qualifications and their capacity to carry out the work.

In most cases, what we'll ask is that they have some form of certification from a training course that they have taken that provides them with the information that they need to function as a Radiation Safety Officer in addition to any existing knowledge, experience and skills that they already may possess.

So there is an expectation that there will

be some formal training, and so we balance that against the type of work that they're going to be doing to ensure that we match up -- if we had one specific designation for all Radiation Safety Officers, it might be too little for some of the high-risk operations like industrial radiography and too much for some of the low-risk applications such as gas chromatography that the airports use.

So from those -- from that perspective, that's -- that's how we look at that.

MEMBER McEWAN: Okay. So again, I did specify the medical and particularly the production applications because this is the area where you have large, complex organizations and the RSO will frequently be dealing with two, three, four different types of activity.

I absolutely understand and accept your rationale for the industrial radiography. I think that it's in those areas where I foresee the greatest problems arising in the future as the use of medical isotopes in medicine and the manufacturing of them in the local environments becomes more complex.

So again, I'll -- do you believe that you need to look at the way in which you both look at the qualifications in those environments and at the -- and at the reporting relationships in those environments?

MS MURTHY: Kavita Murthy, for the record.

So there will be -- we will both answer the question, but I'd like to just start off by talking about the Class 2 facilities.

There is a program for certification. There is a regulatory requirement to be a certified Radiation Safety Officer.

The Radiation Safety Officer's name is a part of the licence, so in the appendix where we have information related to the licensee, we will actually have the certificate number and the name of the -- of the Radiation Safety Officer so when there is a change, there has to be an amendment to the licence and so on.

Part of the qualifications we look for other than the didactic qualifications is also operating experience in the facility, the type of facility, so we customize the exam of the Radiation Safety Officer to suit the operations that they are responsible for in addition to verifying that they have the qualifications and the understanding of the Regulations that they're responsible for monitoring for that facility.

A big part of our Type 1 inspection program is an interview process, so it's one thing to look at an org chart and say yes, is there a straight line between the RSO and the CEO of the organization; it's another one to go and actually interview the CEO of the

organization to see if they actually know what the RSO's responsible for and what they, as applicant authority, are responsible for.

So we do conduct those interviews. We do record those interviews. And when we have findings that tell us that there isn't a way that the RSO has that's -- that allows them to get the resources and the attention of the organization, we will raise that in our inspections of these facilities.

MR. FUNDAREK: Peter Fundarek, for the record.

Just to build on what Kavita was talking about, when we identify that there are deficiencies in either the resources, the human or financial resources provided to the Radiation Safety Officer, when those -- when those issues are raised either through review of events or incidents or the annual compliance report or their capacity to respond to our requests for information, then we will take that issue up with the applicant authority by contacting the applicant authority directly because they have, as indicated, committed that on the applicant authority form that they have the sufficient capacity to direct human and financial resources as necessary.

So they have made that commitment. We

will hold them to that commitment. And so we will approach them and discuss the matter directly with them, and we have done so in the past. And it's been very effective.

And this is also one of the reasons why we look for that reporting line to be direct between the Radiation Safety Officer and the applicant authority to tie that together so that when the Radiation Safety Officer has issues with either financial or human resources, they can approach the applicant authority to get that information.

So -- and specifically for academic and medical researchers, this is what we are looking for, to make sure that that reporting line is clear because I agree with you that there can be a very diverse and nebulous function at times, but we want to see that that's clearly outlined in their radiation safety manual. And then their radiation safety manuals is referenced in their licence and becomes part of their licensed obligations.

THE PRESIDENT: I would hope that when you do find deficiencies, you do not hesitate to raise it rather than wait, as recently we have had, in those large organizations, some incidents that raise the issue about the whole governance model and the relationship between the RSO and the -- and some of the senior executive in the organization.

And rather than be reactive -- rather than

be reactive, I would hope that we'll be more aggressive on making sure that we identify those weaknesses early so to prevent them rather than wait for an event that force the issue.

I would also hope, on the other side, that the community, having seen what has recently happened in those incidents, will take stock on their own governance model and start paying more attention to their responsibility that we attribute to the RSO.

So hopefully, that will work both ways.

DR. WILKINS: Dave Wilkins, for the record.

Just to echo what Kavita and Peter were saying, I think this emphasizes the importance of these Type 1 inspections, that submission of documents in a licence application showing a reporting relationship is one thing, but far more valuable are inspectors doing confidential interviews with the RSO and the applicant authority and asking questions.

And indeed, if an applicant authority isn't quite sure who the RSO is, then there's a problem and that needs to be addressed.

THE PRESIDENT: Okay. Mr. Tolgyesi.

Oh, sorry.

MS NERETLJAK: And if I can just make one

further comment about standardization.

If we were to look analogous to us down south in the U.S., you would be hard pressed to find a licensee that doesn't have a certified health physicist representing them, so that's why the CRPA is here and we have this registration process in hopes that we can set a standard for RSOs in Canada.

Thank you.

THE PRESIDENT: But was -- the certification was not set up by the regulator. It was the professional --

MS NERETLJAK: That's right.

THE PRESIDENT: Yeah. So go ahead and organize yourselves. Don't expect us to do that.

MS NERETLJAK: And we -- yes, we have. But without advocacy from the regulator, people will not know that it's a major requirement.

THE PRESIDENT: I would hope that they would know. Subject to all the discussion we just had, I would hope that they would know very well about our expectation in that area.

DR. SCHREINER: John Schreiner, for the record.

I mean, that has changed in my profession over the years also, and the Canadian College of Physicists

in Medicine, I think, made a commitment a few years ago to the Class 2 authorities that they would ensure that there was part of the exams -- and it's a long set of exams. It's oral exams and written exams and yet again oral exams, that there is a component that is examining the Regulations, that is examining the regulatory structure both provincially and nationally, and we have that -- have brought that in.

And occasionally, our membership balks at that because it's yet another thing they have to learn, but to date we have protected that.

MS MURTHY: Just to clarify something, the U.S. NRC does have a requirement to have certified Radiation Safety Officers. The system they have set up is different, but they do require some sort of a certification.

They have, in fact, allowed professional colleges to take on the role of the examiner and maintain that system in that country slightly differently, but there -- even in the U.S. NRC licences the names of the Radiation Safety Officer is mentioned, so you have it pretty much entrenched in the licence.

THE PRESIDENT: I think, Dr. McEwan, we're hinting on -- are you suggesting that we should adopt something similar?

MR. MOSES: Colin Moses, for the record.

I think, as Mr. Fundarek outlined, we're reasonably satisfied with the provisions we have in place to verify and validate the qualifications of the RSOs. We did proceed with the regulatory amendment in the Class 2 nuclear facilities regulations to introduce the requirement for certification of RSOs.

If, you know, through events and through inspections we have a more significant concern with respect to that, I think we do have that option to look at doing that for a broader range of facilities.

THE PRESIDENT: Okay.

MEMBER McEWAN: If I could go back, Mr. President, to your comment, I would prefer proactivity to reactivity, and what I've heard from Mr. Moses is reactivity.

MR. MOSES: Fair point. I don't know if you want to add a little bit.

MR. FUNDAREK: Peter Fundarek, for the record.

Mr. President, you indicated that you don't want us to wait, and I'm certainly hearing that from Dr. McEwan, that you don't want us to wait. You want us to be proactive. And that's certainly what we are doing.

We have established the CRPA-CNSC working

group for just over a year now, and this is part of the rationale for this group. We are having these kinds of discussions right now, and we just had a meeting just recently.

So these are all topics that we are discussing and we're trying to figure our way through this and trying to establish a way going forward.

We also have a very good relationship with all of our Radiation Safety Officers. Each of our licensing specialists and licensing project officers has a very good relationship with their Radiation Safety Officers, and right up to me, as you've heard earlier today, that she considers me her friend, so that's always good because that engenders a good reporting relationship, a good questioning relationship where they can ask questions to us and we can ask questions of them and get the information that we seek so that we can both work together for radiation protection, which is really what we're all here for.

THE PRESIDENT: We all agree. I think we agree, and all the working that you're doing together, that's great, and hopefully, there will be even ongoing improvement. But you know that not all of them have that good a relationship with you.

We had a recent situation which wasn't

that warm and fuzzy, so I'm talking about the one-offs that we would like to become aware of they do damage. I think that's really the point.

I think we need to move on.

Monsieur Tolgyesi.

MEMBER TOLGYESI: I'm sorry. Did I miss -- did this Canadian Radiation Protection Association answer to the question that should the RSOs be mentioned in licence? What's your position?

MS NERETLJAK: Tanya Neretljak, for the record.

I have a consolidated use licence and I have a Class 2 licence, so I am in one of my licences and the other one, I am not. And I have direct reporting to the licence applicant, and so in my opinion, we have a good management structure.

For the larger organizations that don't have that, I think that you will not get to management without them knowing a little bit more about licensing, and usually the application process is done by the RSO and, at the end of the day, the applicant authority is signing at the bottom line.

They probably have not gone through that application, depending on how far up they are in the organization, so if you do have an RSO listed in your

licence, I think that it's only better for the institution and the licensee.

Thank you.

MR. MOSES: Colin Moses, for the record.

Maybe -- I wouldn't mind asking Mr. Peter Fundarek to run through a little bit of verification that we ask of the applicant authorities of the applications before they're submitted to the CNSC.

MR. FUNDAREK: Peter Fundarek, for the record.

The applicant authority, in the past, as was indicated, did, yes, sign on the bottom line originally. That was several years ago.

Since 2011, we have changed the application process and now the applicant authority does have to sign an application authority form. The form is not a simple signature. It requires them to initial several lines in the document to identify that -- and it's -- they have to basically certify and attest that they have access to sufficient financial and human resources, that they are an authorized representative, that they're aware of the application, that they're aware that the application is binding on the applicant and that they will adhere to all the requirements and that they're aware of reporting requirements in terms of bankruptcies for those

licensees that are commercial operations.

So there is a variety of things that they have to attest to, and then they also have to provide us with a copy of government-issued identification so that we can verify who they are. This gets the applicant authority much more involved in the application process, much more than in the past. So the feedback we have received from our licensees is that their applicant authority is much more aware of what is going on with the licensing application.

And they're aware because they are starting to ask questions: What does this mean that making a false statement is an offence under the act? We provide that information as part of the applicant authority form so that they can understand exactly what they're signing. And it's a document that we can hold them accountable to.

So there is a lot of information now, much more involvement of the applicant authority.

THE PRESIDENT: Just as an aside -- I mean I'm showing my ignorance here -- the applicant authority, when they sign, is there a statement that you will have an RSO who is qualified reporting to you?

MR. FUNDAREK: Peter Fundarek, for the record.

That requirement is actually in the

general regulations, section 12.

THE PRESIDENT: Those applicants will not read the general application and they will not read the manual. It would be very nice to have in the one-pager what does it mean to be an applicant that must have an RSO who actually knows what's going on.

MR. FUNDAREK: Peter Fundarek, for the record.

We'll take that back. I just wanted to point out that the applicant authority does have to sign on the line in the application form where they are designating the radiation safety officer. They have to sign in the application itself, in addition to completing the applicant authority form.

So they are designating the person specifically, and they do have an awareness of who is the radiation safety officer.

THE PRESIDENT: No, but this could be a hook for you to make sure that they make sure that it's qualified. It's just another little hook into making sure that they just don't reassign somebody into the job.

DR. SCHREINER: John Schreiner, for the record.

I wish to repeat what David said earlier. All this paperwork is very nice, but the day that we have

an inspection, and we have an introductory meeting with our administration, and we have a debriefing meeting at the end of four or five days of many interviews with our inspectors with the administration there, that very much focuses their minds occasionally.

Paperwork is all very fine, but they do a lot of paperwork for a lot of regulators and they're under a lot of constraints and there is a lot of budgetary pressures, and they still have to keep operations going. But the day that they have somebody in the room that is telling them, "This is where the bottom line is" is very, very important.

And I know this is also a heavy resource for the Class II Division to come and spend many days with us -- and I suspect one of these days they'll be dropping the number of these that are happening -- but I think that we have to maintain that presence of the CNSC in the hospitals and in the big institutions because it's those days that really focuses the mind of everybody in the hospital.

In fact, it also works very much with our junior staff, and just the staff on the floor. The fact that they know that they're going to have a 30-minute interview with an inspector from the CNSC reminds them that they are supposed to know our manual pretty well.

Anyway, thank you.

THE PRESIDENT: Thank you.

Okay, let's move on. Monsieur Harvey.

MEMBER HARVEY: My last question. It's about the consultation period.

On page 65 of your presentation, you mentioned that you have received three submissions, in fact, from organizations which are linked or concerned by the sector, and nothing from the public or the environmental groups.

So my question is: Is it possible to measure the interest of the general public and for the other groups for such reports, which are very interesting and which require a lot of work? Is it always like this for these type of consultations when the report is not completed yet, or is it to say that the general public can be -- and those groups are not interested?

Have you been able, for example, for last year's report to have a sense how to measure the public interest by number of visits on the website and things like that?

Because it's quite valuable information for the public, so....

MR. MOSES: Colin Moses, for the record.

Sorry, I was just getting the specific

click stats. We do on our website have web metrics that can measure sort of downloads or number of hits, and I think we got about 150 on this report, which I think is excellent.

But I think, turning it around, quite honestly, the consultation on this report, I was quite pleased with the response. I think it was great that we had engagement from some of the industry associations. I think it is only natural -- and this is speaking a little bit from my background on the consultations on the reg docs --the people most interested in our activities are the people that are subject to our regulation.

With respect to the public interest, I think there is a bit of an awareness. There's not as much awareness of our role in regulating this sector on the part of the public than there is, say, when you're talking about nuclear power plants, because a lot of our industry isn't necessarily part of the nuclear industry -- they have a nuclear function, they have nuclear roles, they use nuclear tools -- so I think it's only natural that the main people viewing and commenting on the reports are part of the industry.

We do information sessions through the broader public and in the community, for example, the CNSC 101 sessions, and from there we do have participation from

the public. We emphasize through those sessions the broad mandate that we have to regulate the industry and speak to all the different sectors of the industry. So we do increase awareness through that.

But in terms of this particular report, as I said, I was quite pleased with the response that we had from our stakeholder community.

MEMBER HARVEY: Is it similar to the type of response you receive for the other reports you have presented to the Commission this year?

MR. MOSES: Colin Moses, for the record.

I'm not sure exactly what kind of response we had from some of the other reports, so it's something I can look into and get back to you on. But I do know that -- I think we have quite extensive interventions in this report compared to some of the other reports that were presented, for what it's worth.

THE PRESIDENT: So it's really not a public kind of report that the public will read at bedtime. This doesn't read --

MEMBER HARVEY: Not all the reports.

--- Laughter / Rires

THE PRESIDENT: -- to me like that. But for all the 60,000 workers, I assume that would be of interest, but that's the population.

But I was surprised that the industrial radiography industry is not here. They used to come up in previous years. I don't know why they didn't -- they have a working group, and there was some interesting issues about financial guarantees and all this, so I'm surprised they're not here. I don't know whether you have an explanation for that.

MR. MOSES: Colin Moses, for the record.

Probably because we're keeping them too busy. We had a session last week with the industrial radiography. We host an Eastern annual meeting and a Western annual meeting. So last week we hosted the Eastern annual meeting, and I'm pleased to say that that attendance at that session, where we discussed some of these regulatory issues, and did highlight this report, for the record, was the highest attendance we've ever had at that meeting.

Next week, we're heading out to just south of Edmonton to hold the Eastern -- or, sorry, the Western annual meeting with industrial radiographers, followed by another day meeting with the working group.

So I think over the past few years we've been very happy with the engagement of that industry in our regulatory activities, and their commitment to sharing lessons learned and safety culture discussions.

THE PRESIDENT: Thank you.

MEMBER HARVEY: Quickly -- it was supposed to be last one, but I've got another one -- I had right at the beginning --

THE PRESIDENT: We got all the time in the world.

MEMBER HARVEY: It's just about the regional officers.

You've got four regional offices. Could you just give us the importance of each one? I suppose Ontario is the biggest one, but....

MR. RABSKI: Henry Rabski, for the record.

As indicated in the report, we have a wide distribution across Canada of licensees from coast to coast and north to south. In Western Canada we have a regional office in Calgary, based in Calgary, and they look after British Columbia, Alberta and the northern territories. Predominantly, that focus is an industrial focus, along with the other academic and medical licensees. But there's a strong industrial focus. Along with inspectors based out of the Calgary office, we're also fortunate to have a couple of licensing specialists that service Western Canada from that office.

Moving east, we have an office in Mississauga. They look after Central Canada, and that

includes Ontario, Manitoba and Saskatchewan. They have a multi-purpose, multi-distribution of licensees, so they have a very strong combination of both hospitals, because of the concentration of the population, academic, in the universities, as well as a component of industrial. So they're based out of our Mississauga office.

For Eastern Canada, pour la province de Québec, we have an office in Laval. That office is primarily just inspectors and they look after Eastern Canada. So they look after Quebec, New Brunswick, Nova Scotia, Newfoundland and Prince Edward Island. They service that particular area of Canada.

In the Capital Region, we have a very small office of an inspector and the operations group, and we look after the Capital Region, and support the other areas across Canada, and provide that coverage as well.

So we do our best to cover all of Canada, and do a fair representation for everyone.

MEMBER HARVEY: Merci.

THE PRESIDENT: Ms Velshi.

MEMBER VELSHI: Thank you.

If you turn to your slide number 37, again it's one of those things where most of these are not in the nuclear business. But when we look at the end results, I mean you've got six people who've had more than 20

millisieverts last year, the highest being 25, probably the highest NEW dose that we have seen. And I don't believe any of that was related due to an unplanned exposure.

So is that fairly typical, and are there action levels to try to control or restrict further exposures in a year if they hit a certain level?

MR. FUNDAREK: Peter Fundarek, for the record.

The doses that you're referring on slide 37 -- is that correct?

MEMBER VELSHI: That is correct.

MR. FUNDAREK: Okay.

MEMBER VELSHI: Yeah, for the radiography folks, the six of them.

MR. FUNDAREK: Yes -- it is in the radiography industry, and the radiography industry has some of the highest exposures because they're working very high activity sources. It has been identified as a high-risk activity. And although there's only about 110 licensees in this area, we do pay a lot of regulatory attention to this group.

As Mr. Moses indicated, we have our radiography meetings once a year with the radiography industry to provide them with information, and we also have the radiography working group.

This is a result of them working with very high activity sources in close proximity. They're conducting evaluations in the field, typically not under the best weather or geographical conditions, or weather conditions actually. So they're working at all times of the year, in all different kinds of situations, anywhere possible to do this work.

So that, along with the other issues associated that I've already indicated, contributes to the high doses to this.

Now as for the controls that we provide, those radiography licences are required through action levels -- or through a licence condition to implement a process of action levels. So we do have a series of action levels, typically for daily exposures, weekly exposures, quarterly exposures and annual exposures, and the five-year dose limit.

So they do have a comprehensive system of action levels that we evaluate for each licensee, based on their own performance, to ensure that they have sufficient learning capacity to let them know when their program is getting out of scope so that they can take corrective measures as necessary. But as a factor of the work that they do, they do incur the high dose -- the higher doses.

MEMBER VELSHI: Thank you.

And what's been helpful is, because we've been seeing these annual oversight reports over the last couple of days, it allows for some comparison. Because what we don't get a full picture of the national scene.

So if I look at TRIUMF, I think it's the only major -- it is the only major nuclear facility that has got two below expectations. I don't think we have any other facility that's been rated like that. So they have that unenvious position of having that, and I know it's primarily as a result of the near misses that they've had.

So if they address those corrective actions, do you expect them to reach fully satisfactory, or are they already at that level this year, or are their issues a lot more systemic and longstanding?

MS MURTHY: I will start -- Kavita Murthy for the record -- and I'll ask Jeff Sandeman, and then perhaps TRIUMF, to add to my answer.

So as a result of the near-miss event was TRIUMF and CNSC did not consider this a level 0, and therefore no action was required. We took it very seriously because you can never take these sorts of incidents in isolation, which was why the activities, commissioning activities, were suspended for nearly a year.

An extensive review was done not just of the standard operating procedures associated with the ARIEL

project, but there were also other inspections, and they did a wholistic review of their other systems to make sure nothing was going to be missed.

As a result of that, they have embarked on a fairly comprehensive review of their program, and we believe that they're well on their way to going towards to fully satisfactory.

On the exact status of the corrective actions, and the nature of the work, I think Jeff Sandeman can comment.

MR. SANDEMAN: Jeff Sandeman, Senior Project Officer, Accelerators and Class II Division, for the record.

To answer your question, from what I've seen so far this year, and the inspections I've done, they're at a satisfactory level. Some of the issues relating to the training program are not quite where I want to see them yet, but I don't -- there's no issues outstanding that I would say present an immediate threat to health and safety.

I think part of what you have to keep in mind is that a lot of this incident was associated with the newness and complexity of ARIEL. The implementation of these programs for the routine operations is quite good, it's the -- and it was how -- the handling of a new major

project, with a lot of change and a lot of dynamics, certainly had an impact on this.

I hope that helps.

MEMBER VELSHI: It does. Thank you.

TRIUMF, did you want to add to any of those comments?

MR. BAGGER: Yeah.

For the record, this is Jonathan Bagger. I'm the Director of TRIUMF.

The ARIEL project was indeed of a scale of such that TRIUMF had not really had a project of that size in something like 20 years, and so it really did stress our existing QMS and safety and project management programs. So the near-miss alerted us to those -- well, frankly, those weaknesses, and so we immediately shut down the commissioning operations of ARIEL and embarked both on a series of corrective actions for ARIEL, but then a larger look across the laboratory as well to see what we could learn from that incident.

So in response, we have strengthened our core programs in safety across the laboratory, and especially in QMS, quality management, in training and in safety.

We're also strengthening our project management, because if we'd had a stronger project

management system in place to begin with we would have recognized that we needed the stronger QMS and safety to carry out the project of ARIEL.

We've had our plans reviewed by an external committee, which contained university, laboratory and industrial members. They have guided us. We're received great guidance as well from CNSC and from program officers, and that's also been very helpful.

So many changes have been made. We did take the year of looking at our systems across the laboratory, and we have just restarted commissioning this month in fact.

We are not finished with the changes we're making, but I believe we have a good foundation for going forward.

MEMBER VELSHI: Thank you very much.

THE PRESIDENT: Thank you.

Dr. McEwan.

MEMBER McEWAN: Thank you, Mr. President.

So a couple of very quick questions.

Moving on from that question, and our previous discussion, I think it is really important that we start reporting management systems safety and control areas and operating parameters at least for large organizations that have large complex licences or a series of licences.

I think if we don't start doing that, we're going to see issues developing that aren't picked up by some of the reactive systems that we have in place now. So I'd just be interested in staff's comment on that.

MR. MOSES: Colin Moses, for the record.

So the SCAs that we report on in this industry report are chosen to help us see the overall trends and the overall performance of the industry. But they do embed a number of the different SCAs, and when we are doing our compliance inspections and our licensing work we're evaluating all the SCAs.

So a good example of that is training. So in the operating performance, you're looking at procedural adherence. And if you're seeing indicators of poor procedural adherence, that's an indicator of poor training, which relates to human performance management, for example.

But I do take your point on sort of making sure that we're identifying the leading indicators in the report, and sharing that more broadly, and we can take that feedback back for future additions of the report.

THE PRESIDENT: Well, in fact, we hear from CRPA that they actually want, particularly for large institutions, they want to see any other observations, aside from the major SCA that you were focused on, that if you find anything that can be shared they'd be also

interest in this.

So when you go to overall the introduction of the report, that's great, you have good data that's comparable. But then when you get to the larger institutions, it doesn't make sense to compare TRIUMF, with their radiographer, if you know what I'm saying. So they have different kind of issues, and you should -- when you go down to the specific sector, you should use a different number of focuses that you're reporting on.

MR. MOSES: Thank you.

And just to reiterate, I think for the purposes of that report we can take their feedback, but we are sharing the performance across all SCAs with the industry through some of the outreach sessions.

THE PRESIDENT: Thank you.

MEMBER McEWAN: And just one.

Very quickly again, Figure 21, on page 46, I would really next year like to see a breakout of those institutions doing considerable therapeutic nuclear medicine and PET separated out from those that don't do it, just do general nuclear medicine. I would really like to understand what the dose differences are for the NEWs in those two subsectors of that sector.

THE PRESIDENT: Okay.

MS MURTHY: Kavita Murthy, for the record.

The information related to doses is gleaned from annual compliance reports. And because there's often an overlap of employees working in diagnostic versus therapeutic medicine, it's not differentiated in the annual compliance report. We would have to look at some other way of getting that data out, because often it could be the same person carrying out those two functions.

MEMBER McEWAN: You could do it by institution. There are many institutions that don't do PET, there are many institutions that don't do a lot of therapy, and those are the groups that we should be concerned about.

THE PRESIDENT: Anyhow, don't try to figure that out now. Just take it out and think about that.

Monsieur Tolgyesi...?

MEMBER TOLGYESI: This is a question to Canadian Radiation Protection.

If I understood well, your members originate from all those four subsectors, like commercial, et cetera. Now, we observe also that operating performances for the four are the weakest part of all compliances in all four subsectors. When I say "weak," I mean bear with me, it is between 87 and 91 percent. These operating performances are related mainly, if not only, to

working procedures, to labour, okay.

Is your association involved in development or coordination of any common needs like training or do you contemplate that to be part of it?

MS NERETLJAK: Tanya Neretljak for the record.

Yes, the CRPA does offer and does put on sessions for training, and specifically for Radiation Safety Officer training, and if there is a specific need to operator training, many of our corporate members actually are doing this type of training for the industry as well as being a licensee themselves.

So yes, the CRPA does offer, and in our yearly conference one of our bigger components is offering training sessions for people in these needs and we try to identify what our members would require and we try to offer that and we are now trying to implement training outside of the conference itself.

MEMBER TOLGYESI: So to what extent could you come to a member or to a subsector to say that your performances are weak and you should upgrade or you should do something and we could help you or you could find the help somewhere?

MS NERETLJAK: Yes, that is correct, we are trying to identify that and see where we can fill the

need.

MEMBER TOLGYESI: And you are well accepted? I hope so.

MS NERETLJAK: Yes, of course we are. Thank you.

THE PRESIDENT: Thank you.

Monsieur Harvey...?

Ms Velshi...?

MEMBER VELSHI: I have a couple of quick questions for COMP.

On your slide 12, please, your last point on that around a potential conflict between patient care and CNSC regulations, can you elaborate on that and help me understand that concern a bit better, please?

DR. SCHREINER: John Schreiner for the record.

This is going to be kind of setting up a scenario that perhaps is not quite so realistic and I will ask Kavita and Jeff perhaps to correct me if I say things incorrectly.

The Regulations state that certain requirements are needed, particularly with safety systems, warning systems, door interlocks and things. So I am going to make a scenario where a door interlock fails.

The Regulation says I need to have that

door interlock in place and now I have a door interlock that has failed and I have 30 patients that are set for treatment on that unit. Now the decision has to come, do I continue to treat, making sure that we have some mitigating actions and that we are doing things still to ensure safety.

When we call the regulator, of course a licensing officer is very reluctant to say to us, oh, well, you know, don't worry about the Regulations, just tell us how you are going to do it, and depending especially on the expertise and the relationship you have with that licensing officer.

So one can dream of scenarios where we have competing goals. We want to make sure that we don't lose any treatment of patients because a door interlock has failed, especially if our staff know how to use the machine safely still in those conditions.

So one can dream up situations and it would be nice if we could start to discuss together, you know, are there some places in the Regulations where things are a little bit too restrictive.

New machines that are being designed these days, new machines have a lot of other things, so sometimes the emergency offs are a little bit different on a particular design of a new machine or something and we are

always trying to figure out, you know, how does this fit into the regulatory framework and how do we make sure that we can still use these machines safely.

So it's kind of a made up scenario perhaps but I have known of situations where we are perhaps pushing the limits. We are still trying to get patients treated. It is because of a particular warning system that is not open and we can't get quite the clearance that we would like from the staff.

Now again, I would ask Kavita or Jeff to tell me if I'm way off base there.

MEMBER VELSHI: Here's your chance.

MS MURTHY: I won't say you are way off base but just maybe a little.

So safety system requirements are embedded in the Regulations and we do understand that from time to time there are situations where we need to be able to authorize the facility to operate because there is a patient, a need for them to operate, but we will not authorize it if the facility is not safe.

What we require from licensees to do in such situations is to inform us and let us know how they handled -- what interim measures they put in, for how long and how they operated safely. And that happens. It is not something that has never happened. It does happen, we do

understand that.

So as much as possible when new technology comes, the beauty of our Regulations is that it is not as -- even though some would say it is very prescriptive, it is not as prescriptive. We have had to have a look at the Regulations to see how we could accommodate new technologies.

Where we had a beam that could point in a circle, now pointing in any possible orientation, we have to say, well, there is a requirement to have an emergency stop button outside the beam. In this case, it's not possible because the beam can be pretty much pointed anywhere, so how are we going to implement it.

So we have come up with licence conditions in some cases where we have said, okay, the Regulations don't quite address it, so we will put a licence condition in and moved on with that.

So as much as -- we are very cognizant of the fact that these are hospitals and they have patients who are waiting to get very important treatment. We do work with our Radiation Safety Officers and our facility contacts to make sure that we are not endangering the employees, at the same time making sure that we are not a barrier from them completing their own mandates.

DR. SCHREINER: John Schreiner for the

record.

Again, I want to make it clear that we do work with our officers and do try to get around these things.

Many, many years ago I treated a patient in Kingston on a device that was not to be used clinically. Because there was a power outage, the cobalt unit was the only unit we had for an emergency treatment and I couldn't get clearance from the CNSC staff because nobody could talk to each other. There was no communications in the province for three days. Three days later I got clearance and we subsequently amended our licence.

So we do work together, but occasionally, again, you know, someone who is not as familiar, someone where the relationship is not as smooth, that working together doesn't work as smoothly. So I think what we were trying to make is let us continue to work together so that we can generate this smooth collaboration across all centres and it's not just, again, because David works very well with Jeff or whomever.

THE PRESIDENT: Well, let me understand something here.

There are two different issues and let me use nuclear power as an example, okay. If there is a major accident, I don't want the nuclear operator in the control

room to phone up and say, "Can I ventilate?" Okay. The responsibility for safety is the licensee, not the regulator. Let's see if we agree on that.

What you are talking about is systemic issues where we have been bending backwards and saying if there is something in our Regulation that doesn't make sense that can be relaxed, can be turned into guidance, please come forward and make the case, and we are very open to that, if I understand our regulatory process. But we cannot substitute, we cannot give you the comfort level of you coming up and passing the baton to our staff to give you permission to do something unsafe.

DR. SCHREINER: John Schreiner for the record.

We would never request that of the regulator and we understand the constraints under which you can work, but I think it is perhaps where we are trying to identify aspects of the Regulation that we believe need to be worked on. And I think our community is beginning to appreciate how much you want our help to do that. We didn't appreciate that in the past and that's why we are here.

THE PRESIDENT: But this is a segue to one of my favourites: cremation. I'm glad you raised it, it is a real sore button with me because I have asked our

staff and their first reaction was it is a provincial responsibility, but I have to tell you, somebody has to take responsibility for the silliness that we observe now that families have to go and take the stiff out and do whatever they want with it just to alleviate the concern of the funeral home. Unacceptable. And for the provinces not to fix it requires somebody else. So, you know, the list of things to do, why don't you pick this one and let's commit to actually fixing it.

DR. SCHREINER: Do you want to cover that one?

DR. WILKINS: Yes, I absolutely agree. It is a regulatory morass and, you know, our colleagues end up sitting in the middle of it, but more so it is the families of deceased brachytherapy patients who really don't want to be dealing with anything like that at the time and it's not fair to put them through that, and what's needed is clarity and absolutely we are prepared to work with the CNSC and do whatever is required to straighten this out.

DR. SCHREINER: John Schreiner for the record.

And my understanding is that there are some people putting their heads together to work this out together. I know there are some people in Quebec that have been helping people in the CNSC to try and make a

statement.

THE PRESIDENT: I hope so, because we have asked that that be done.

MR. MOSES: Colin Moses for the record.

I can confirm that is being done. We have drafted initial guidelines around that question and shared it with industry and gotten some preliminary feedback and we are looking at developing a discussion paper to flesh out this issue in a bit more detail.

THE PRESIDENT: Where were we?

Ms Velshi...?

MEMBER VELSHI: My second one again to you was on your slide 14. We've just talked about cremation, but it's the one after that, on reducing administrative burden for both the CNSC and licensees and I suspect you are having a dialogue on that. Is there anything you think the Commission needs to hear on that?

DR. WILKINS: Yes. I mean there is ongoing discussion about this sort of thing, and the programs to consolidate licences in healthcare facilities I think is an excellent initiative as well as, you know, electronic submission of ACRs and this sort of thing. I think there has been good progress in that area and we are quite pleased with the dialogue that has been going on.

MEMBER VELSHI: Thank you.

DR. SCHREINER: John Schreiner for the record.

But an example of one of the difficulties for example is the new Regs under security, where we can appreciate very much what the international environment is like and everybody wants to keep things secure, but we also have to remember that many hospitals have many, many employees, many of those employees who are on contract. Often, the security delivery for a hospital is by employees that are under contract and some of the -- as we look down the line for things that are going to come down the line in 2018 or whenever they turn on, it is going to add a huge administrative burden to hospital HR departments and radiation safety groups to try to achieve some of the things that I suspect you thought was a simple thing to ask for as you set those Regulations together.

THE PRESIDENT: We have some security people coming here but I have to tell you, on security you have to be really careful what you wish for. In fact, because it is in hospital, it probably would be a good target, let me use that word, for some untoward activities. Do you want to help us with this?

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

Just to say that obviously we are still

two or three years away, so we are not -- we haven't seen the actual burdens that they are going to entail. We haven't had that problem to date, so I'm not sure if there is a specific question here, but, you know, so far it hasn't been a problem and we are still a couple of years away.

THE PRESIDENT: But again, I invite you to comment on any regulatory document being proposed and participate in the ongoing discussion and outline areas where you think there are going to be some difficulties.

DR. SCHREINER: And again, David and I will commit that the COMP wants to start to be more engaged in these conversations.

THE PRESIDENT: Again, the segue. So I really appreciate your intervention here but I also wonder why are you not showing up in our public hearings. We have public hearings almost once a month in which radiation angst and issues are always expressed by the public, and in fact being from the medical side, from the radiation side experts, you carry some credibility. I don't know why you never show up in front of us and give some science-based arguments to some of the material that is being presented in front of us. Some of it is not exactly scientifically based.

DR. SCHREINER: John Schreiner for the

record.

Mr. President, I am quite hurt that you don't remember I was in Chalk River a few years ago at just such a meeting.

--- Laughter / Rires

DR. SCHREINER: But I suspect part of it is that we are very busy and we have been trying to focus on areas where we think we can be very helpful. If the CNSC thinks it would be more helpful for us to be engaged with the general public, we are happy to do that.

I will assure the CNSC that whenever we are asked by colleagues in the hospital, by other workers, by the public, how we believe this regulatory framework is working, we speak highly of what the CNSC is trying to do and we try to educate in our small way the public on the activities of your Commission and your employees.

MS NERETLJAK: Tanya Neretljak for the record.

I just wanted to echo Dr. Schreiner that, yes, it is partly because we are all very busy and it is really difficult sometimes to make your public sessions, depending on where they are being held and the topic on hand. So if we find that we are expertise in that area, you may see us present there. If not, it could be because we can't really add to that or we just logistically can't

make it. But otherwise, we would actually be there every time if we could.

THE PRESIDENT: Well, you know, if you don't show up to some of those public hearings, we end up speaking amongst ourselves and, you know, we are in the nuclear kind of a sector, we understand what's going on and you don't get much opportunity to talk to the public at large.

So we are going to have in November a Darlington hearing. I invite you to at least listen in because you are going to hear all kinds of interventions about nuclear and nuclear dangers and nuclear angst about the general population.

Anyhow, enough of that. Where are we now?

MEMBER McEWAN: So page 27, Figure 16. I am simply picking this graph. There are a couple of others and a couple of other data sets we could look at. But if we superimpose the --

--- Pause

THE PRESIDENT: I know you have to catch a train, I guess. So thank you. Thank you for your intervention.

UNIDENTIFIED SPEAKER: Thank you very much.

MEMBER McEWAN: So if you superimpose the

inspection ratings of operating performances for the NPPs onto that --

THE PRESIDENT: What page are you on?

MEMBER McEWAN: Page 27, Figure 16. Where would they sit in relationship to the four sectors that you have identified there and at what level would you be satisfied with the performance of those sectors in moving towards that line?

MR. MOSES: Colin Moses for the record.

I am not sure that I can answer your question today. I don't have the data on hand with respect to the nuclear power plant performance.

I think we will be satisfied when everybody is performing at 100 percent but I think the reality is that that wouldn't necessarily happen. But we are very satisfied with some of the trends that we see across the board, for the most part seeing improvement over the past five years and I think that is thanks in large part to some of the outreach activities that we have been doing.

MEMBER McEWAN: Sure. But if I look at the commercial and academic and research sectors, certainly the commercial sector is now below where it was five years ago and with an N of 1 the trend is in the wrong direction.

MR. MOSES: Colin Moses for the record.

You know, I think it is important to keep in mind that some of the variations within the normal performance are expected in the data. We do look at the trends of the performance of the various subsectors to determine inspection frequencies, and you heard in our presentation that we have adjusted the inspection frequencies for some specific sectors, and so, you know, that is where this kind of data is helpful to let us determine sort of what our inspection plans are, what our outreach plans are, where we need to focus our efforts, where we need to drive compliance much more broadly within different subsectors.

THE PRESIDENT: I think Dr. McEwan is raising a really intriguing question here. We are now using the same 14 safety and control areas, so theoretically we can do this kind of inspection meeting requirement to all our facilities, mines, new NPPs. I just don't know if it makes sense, but if we can, this is a different way of measuring compliance here as opposed to the fully satisfactory, satisfactory, et cetera.

So it is probably worthwhile to take a look to see if you can actually do this, because then we can truly have a CNSC-wide kind of a measurement that puts all of them together. If you can actually compare apples and oranges, medical, industrial, academic and commercial,

I don't see why you can't put in mines and processing facilities.

I don't know the answer to this. I see Mr. Jammal smiling in the background. This being a meeting we can be a little bit loose and allow you to blue sky here.

MR. JAMMAL: It's Ramzi Jammal for the record.

Yes, I will ask for the blue sky to come alongside the blue skies, the resources, but since I'm being loose, so I will --

THE PRESIDENT: They do it anyhow when they put the -- when they do all the inspections.

MR. JAMMAL: We will -- you are throwing a challenge now -- all seriousness with respect to my response. You are throwing a challenge in order to compare the NPP or the facilities with respect to the industrial radiography or DNSR.

So if you are going to compare apples to apples. We will have to focus on elements that the inspectors will look at versus a programmatic review. So we will take that into consideration and then we will see if the superimposition, we're comparing apples to apples.

As mentioned, even at the facility we start with the licence application, you determine the

program and, yes, there are unique opportunities where our inspectors on site are looking at the same element as an inspector in Mr. Rabski's shop and we can start to do these comparisons. But give us some time in order to determine if there is any validity to do it and does it make sense.

From a satisfactory point of view, Dr. McEwan asked the percentage. If you look at the NPP -- and I'm not opening up now how it will reach satisfactory, but satisfactory range in nuclear power plants is in the range of 75 percent all the way up to 85 percent. So you have that range allowing, so, a rough estimation probably would be in the same line, within the same range, even if we take that error bar accordingly. But we will look into it from --

THE PRESIDENT: I don't see much difference between assessing TRIUMF from fuel facilities in Port Hope. What's the difference really?

MR. JAMMAL: Well --

THE PRESIDENT: Don't answer it here.

MR. JAMMAL: I'm not going to answer it, but at the same time --

THE PRESIDENT: All right. Please.

MR. JAMMAL: -- yes, there is some difference but we will take what is comparable to compare, and we will do it.

THE PRESIDENT: Mr. Tolgyesi...?

Monsieur Harvey...?

Dr. McEwan...?

MEMBER McEWAN: I'm sorry. Page 35, spill and contamination. There were 39 events related to contamination of personnel reported. Can you remind me, please, at what level of contamination of an individual the event is required to be reported?

MR. FUNDAREK: Peter Fundarek for the record.

In the Regulations, in the *Nuclear Substances and Radiation Devices Regulations* there is a stipulation requiring all reporting of skin contamination because it potentially represents a significant exposure to the person.

We have developed a -- we are developing a policy on this to look at it in respect of the different isotopes so that we can provide further guidance to licensees exactly what the reporting requirements are going to be to clarify them even further, but currently we do require reporting on all skin contamination because of the potential for the dose to escalate rapidly.

MEMBER McEWAN: So in that case I'm really surprised there were only 39 events given the number of licences and licensees and the number of individuals that

you have working with unsealed sources. I'm not asking for a comment. It's just if every event has to be reported, that number to me seems low.

MR. FUNDAREK: Peter Fundarek for the record.

The vast majority of our licensees actually use sealed sources. So they are the industrial applications and so they are not using open source, unsealed sources. So the potential there is much lower.

We do require significant handling requirements for radioactive materials and unsealed as necessary. So we do ensure that there are sufficient procedures in place to prevent skin contamination. Any spills that happen inside hot cells or inside containment, they are not reported because there is no safety significance to those reports.

THE PRESIDENT: Monsieur Tolgyesi...? Do you have any more?

Okay, I will give you relief, I will start asking some of mine.

First of all, I would like to start by saying I really enjoyed reading it. It's a lot of material in there, a lot of good work. I also like your forecast for the future, for the year 2015. I think it is a good addition.

Two quickies and one of them is relating to how many licensees have more than one licence. I really would like to see -- I don't know if I want to see it in a report or you send it to us as a special report. You have 1700 licensees with 2400, 2415 licenses. I would like to see the distribution. How many licensees have two, how many licensees have three, how many licensees have four? And I just heard that there could be one licensee that has 10 licences. I just want to see the distribution so we can maybe focus on whether there is room for improvement further.

And also, on the next slide, on page 17, you always break down by sector the number of nuclear energy workers. Why not by the total workers, you know, the 60,000? It would be interesting to superimpose on that graph or by itself so we can see where all the workers in those facilities are, because I think it will be an interesting different stat.

Dr. McEwan...?

MEMBER McEWAN: I think I have asked all my important questions, Mr. President. Thank you.

THE PRESIDENT: Okay. Any final comment?

I think -- again, I am repeating myself -- the intervention from you and your six recommendations I really well appreciate. I assume staff will take them

really seriously and you can check next year what they have done, what they have not, and thank you for that.

Any last comment by anybody?

So thank you. I think this concludes the public meeting of the Commission. I thank all of you for participating and joining us via the webcast.

Anything?

MS McGEE: If you borrowed an interpretation device, please remember to return it at the reception and claim your identification card. Thank you. Bonne fin de journée.

---- Whereupon the meeting concluded at 4:30 p.m. /
La réunion s'est terminée à 16 h 30