

**Canadian Nuclear
Safety Commission**

**Commission canadienne de
sûreté nucléaire**

Public meeting

Réunion publique

May 2nd, 2012

Le 2 mai 2012

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

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

Commission Members present

Commissaires présents

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

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

Secretary:

Secrétaire:

Mr. Marc Leblanc

M. Marc Leblanc

Senior General Counsel :

Avocat général principal:

Mr. Jacques Lavoie

M. Jacques Lavoie

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Ottawa, Ontario

--- Upon commencing at 2:07 p.m./

L'audience est débute à 14h07

12-M20.A

Opening remarks

MR. LEBLANC: Bonjour. Bienvenue à la réunion publique de la Commission canadienne de sûreté nucléaire.

We have simultaneous translation. Des appareils de traduction sont disponibles à la réception.

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

This proceeding is being video webcasted live and archives of these proceedings will be available on our website for a three-month period after the close 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.

Monsieur Binder.

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

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

Je vous souhaite la bienvenue. And welcome to all of you who are joining us via our webcast or through telecommunications.

I'd like to begin by introducing the Members of the Commission that are here with us today. On my right is Dr. Moyra McDill and Mr. Dan Tolgyesi; on my left are Ms. Rumina Velshi, Mr. -- Dr. Barriault and Monsieur André Harvey.

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

MR. LEBLANC: The *Nuclear Safety and Control Act* authorizes the Commission to hold meetings for the conduct of its affairs.

Please refer to the revised agenda published on May 1st for the complete list of items to be presented today and tomorrow.

In addition, the written documents reviewed by the Commission for today's meeting, CNSC staff and

licensees will have an opportunity to make presentations and Commission Members will be afforded an opportunity to ask questions on the items before us.

Before adopting the agenda I would like to note that 15 supplementary Commission Member Documents or CMDs were added to the agenda after its publication on April 18, most of which relate to the Fukushima Action Plan that will take place tomorrow.

Mr. President.

THE CHAIRMAN: Okay, thank you.

With this information I'd like to call for the adoption of the Agenda by the Commission Members.

Do we have concurrence?

For the record, the Agenda is adopted.

12-M21-B

Adoption of Agenda

THE CHAIRMAN: I'd like now to get approval of the Minutes of the Commission, that was held March 28 and 29. The minutes are outlined in CMD 12-M22.

Any comments, additions, deletions?

Okay, I guess silence is approval.

For the record, the Minutes are approved.

12-M22

**Approval of Minutes of
Commission Meeting held
March 28 and 29, 2012**

THE CHAIRMAN: The next item on the agenda is an early notification report (ENR) regarding Atomic Energy of Canada on a workplace fatality reported at the Chalk River Laboratories, as outlined in CMD 12-M27.

And I understand Mr. Andrew White is joining us via teleconference.

Mr. White, can you hear us?

MR. WHITE: That's correct; I'm joining you by teleconference.

THE CHAIRMAN: Okay, thank you.

I'll turn the floor to Mr. Elder.

4. Status Reports

4.1 Early Notification Reports

4.1.1 - 12-M27

**Atomic Energy of Canada Limited:
Workplace Fatality Reported at
AECL's Chalk River Laboratories**

MR. ELDER: Thank you, Mr. President.

We just have some additional facts on this unfortunate circumstances since the early notification was filed on April 19th, which was actually the day after the incident.

So since then the investigations have continued. AECL has completed their internal investigations, basically focused on what the employee was doing.

The employee had just finished his shift so they were going back in and walked through all the activities he had done on that shift to make sure he was not exposed to any dangerous substances during the shift or hazards during his shift. They did not find any such hazards.

The investigations by HRDSC, which is the lead under the Canada and Labour Code and the Workplace Safety Insurance Board, are continuing, so we don't have the results of those investigations right now.

But again, we have not seen any indication that the work -- that it was directly work-related. And again, he was found in his vehicle after having completed his shift. He was found the next morning.

And that's all the update we have. Perhaps

AECL would have some other points to add.

THE CHAIRMAN: Okay, anybody has any questions?

Dr. Barriault?

MEMBER BARRIAULT: Just briefly. What type of work did this employee do at the plant?

MR. WHITE: Perhaps I should answer.

For the record, my name is Andrew White, I'm the General Manager of Programs and Nuclear Oversight with AECL.

The employee in question is one of our firefighters and he was on shift. The work he was performing was some walk-downs of some buildings during an overnight shift.

MEMBER BARRIAULT: Do you have a fitness for duty program with the firefighters?

MR. WHITE: Andrew White, for the record. That is correct.

MEMBER BARRIAULT: Okay. So I would assume now that you're waiting for the coroner's report or the autopsy reports as to cause of death or do we have that?

MR. WHITE: Andrew White, for the record. No, we do not have the coroner's report. In fact, depending on the circumstances, AECL may not get that report, it may be only provided to the family of the

employee.

MEMBER BARRIAULT: Okay.

MR. WHITE: So it really depends on the circumstances, but to the best of our knowledge they have not received that report yet.

MEMBER BARRIAULT: Thank you.

Thank you, Mr. Chairman.

THE CHAIRMAN: But not receiving the report would mean that the coroner does not associate any work-related issues. Is that correct?

MR. WHITE: Andrew White, for the record.

If the coroner has completed his examination that would be correct. I am not aware if he has or that -- if the coroner has completed their examination.

5.2 Saskatchewan Research

**Council: Status report on
Completion of Order, and
Progress on Environmental
Assessment at the Gunnar
Closed Mine Site, Northern
Saskatchewan**

THE CHAIRMAN: Okay, thank you.

Any other questions?

Okay, thank you.

The next item on the agenda is regarding Saskatchewan Research Council for a status report on the completion of an order, which you'll remember very well.

And I wish, before we start, I'd like to acknowledge the presence here in Ottawa of Mr. David McCauley, representing Natural Resources Canada, and Mr. Cory Hughes from Saskatchewan Energy and Resources. Welcome.

And joining us via teleconference are two representatives from Saskatchewan Ministry of Environment, Mr. George Bihun and Mr. Tim Moulding.

Can you two gentlemen hear us?

MR. BIHUN: Yes.

MR. MOULDING: Yes.

THE CHAIRPERSON: Thank you.

So let's start with the presentation from Saskatchewan Research Council as outlined in CMD 12-M25.1 and 12-M21.1A (sic).

And I understand, Mr. Muldoon, you will make the presentation. Please proceed.

12-M25.1 / 12-M25.1A

Oral presentation by the

Saskatchewan Research Council

MR. MULDOON: Good afternoon. For the record, my name is Joe Muldoon. I am with the Saskatchewan Research Council and I am the Vice-President of Environment at SRC.

With me is Dr. Tamara Yankovich, to my right, also with the Saskatchewan Research Council, and she is the Project Manager for the Gunnar Remediation Project.

I would like to start out the presentation this afternoon with a brief video, showing some highlights of the work that has been safely completed by SRC ahead of schedule to address public safety issues related to historic buildings and structures and hazardous materials that had been left on the Gunnar site.

I will then proceed with an update on the work and progress related to the demolition, environmental assessment and licensing for the site.

--- (Video presentation)

"The Gunnar site is a so-called abandoned mine. It was started in the 1950s and abandoned in the 1960s. It was actually the first uranium project in Saskatchewan, one of the first in

Canada. As of 1964, everybody was off the site. They locked things up and basically they just left everything as is. At those times, of course, the environmental standards were much lower, if existed at all. Now we're working on trying to remediate decades of deterioration and scavenging that occurred on the site over time. The Province of Saskatchewan approached SRC to ask if we would be willing to manage the clean-up of the Gunnar Mine site. The main objective of CLEANs Project is to eliminate or mitigate all these environmental hazards associated with Gunnar site and some other sites. So there were, you know, over 20 structures where people used to live that had to be taken down. There were a number of fishing shacks. There was a mall, a school, the head frame, two acid plants, you know, the mill, a powerhouse and many other buildings that supported these structures. One of the big hazards on

the Gunnar Mine site, aside from the physical hazards, was the asbestos that's on site. During the demolition work that SRC oversaw, one of the first steps was to remove the friable and non-friable asbestos. Now, the friable asbestos, because it can get into the air, it can get -- it can pool around in the air, what the contractors would do would be to wet it down to make sure that the fibre count was low in the air. And they also added soap to the water, which would stick to the fibres and keep them down into the wetted surface. We worked closely in discussions with our asbestos expert and Saskatchewan Environment, and they had these little pumps that were pumping the air and monitoring, you know, the fibre counts in the air. And then they would use that to modify their work as necessary. And they would also use that to select the appropriate personal protective equipment to

protect the workers. On a project of this scale, safety is the very top priority. All activities on the site are planned in advance and they're captured in safety plans that are discussed with regulators and approved. There are daily safety meetings that -- where every worker on site had to attend, including SRC staff. There were opportunities for people to discuss issues and to raise them, and then those would get captured and resolved. One of the big milestones that we're really proud of is that we managed to meet the expectations of our clients and the governments and the people that live in the communities in terms of taking down the buildings in a safe manner and alleviating a number of safety risks that have existed there for several decades. At the moment, CLEANS Project and Gunnar part of the CLEANS Project is at a stage of environmental assessment. We tested

all the affected environments, and there is contamination of aquatic environments, lands and air. There's unconfined tailings that you can see. There's -- you know, there's a pit, an open pit, and also there's waste rock piles, you know, which have seepage that feeds into Lake Athabasca. We collected a lot of information and now understand the sources of the environmental contamination and understand the risks associated with the Gunnar site much better than we knew these risks before. Having this information in hand, we can plan the real remediation activities in much more detail and with much more real ability. The biggest thing that I think about the Gunnar project is just the sheer diversity of people with various skillsets that have worked together to make it happen. There's no way to get it done without all the different expertise and the commitment, the sheer commitment by

all the people that participated and continue to participate on this project. It's basically one of the biggest challenges that I've ever had the honour of participating in, and I really love it. And it feels good to be part of the solution."

MR. MULDOON: Okay, if I -- I would proceed with the rest of the presentation -- if I can get the slides up that would be great. Thank you.

So in terms of its history, the abandoned Gunnar site housed a residential area along with a mine and mill comprising an open pit and underground workings from which uranium ore was mined and subsequently milled on site.

The site operated from 1953 to 1964, and it was left as is with no decommissioning.

The Gunnar Mine was operated under different environmental standards than we would expect today. As a result, SRC has been working closely with project partners, regulatory agencies and northern communities to identify needs and to develop a plan to remediate the features shown in this photo.

In the short term, focus has been placed on the abatement and demolition of the buildings and

structures on the Gunnar site to address public safety concerns. With the successful completion of that work, SRC is focused on gaining approval for the remediation plan through the environmental assessment and parallel with developing licence documentation for the site.

Here's a clear view of the Gunnar tailings, just a few photos here to go through. Clear view of the Gunnar tailings area can be seen in this photo, three separate tailings areas.

Here's a closer view of the waste rock. I think that video had a -- some good documentation in terms of what the site looks like.

With respect to the project objectives, existing hazards at Gunnar are being addressed in the context of these three project objectives. These are focused on eliminating or reducing risks to humans and the environment, applying technically and economically feasible approaches to conduct the remediation itself and establishing a cost effective monitoring program that minimizes long-term care and maintenance at the site, which can be very costly due to the remoteness of the site and the fact that it is off the power grid.

We are looking for solutions that minimize the risk of having to undertake any major post-remediation work that would require significant mobilization to a

remote site, and again with no power.

This approach also ensures a smooth transition to move the lands into the institutional controls program.

The corresponding project end points or desired outcomes of the remediation have been developed as listed here.

There's four phases of remediation. The ultimate goal of the Saskatchewan government's intervention at the site is to remediate the site and manage it under the Saskatchewan Institutional Control Program. To do this remediation of the site is being planned using a staged approach consisting of four key phases.

Pre-remediation involves planning and gaining approvals for remediation plans. Remediation itself involves the execution of the plans in a safe and compliant manner. Remediation of the buildings and structures on the Gunnar Mine site was completed by the end of September 2011.

Post-remediation involves the post-remediation monitoring and follow-up to demonstrate success of the remediation and that technologies are performing as expected. And long-term monitoring is conducted to demonstrate improvement of environmental

quality leading to the transition of the site into institutional controls.

Active work that is underway as part of the remediation can be sub-divided into efforts related to gaining approval of the environmental assessment, preparation of documentation for the Gunnar licensing package and detailed engineering to develop specifications for implementation during the remediation phase.

It is anticipated that both the environmental assessment and licensing package will be completed by March 2013 pending approval of the EIS by the responsible authorities. SRC continues to work closely with our partners and regulatory agencies to respond to their needs.

I will now turn the next portion of the presentation over to Dr. Tamara Yankovich, Project Manager for the Gunnar project.

DR. YANKOVICH: Okay. Due to the public safety risks associated with historic buildings and structures on the Gunnar mine site, SRC was directed by the CNSC to secure any hazardous substances and materials that had been left in the buildings and to take the buildings and structures down, in parallel with the preparation of the Gunnar environmental impact statement.

Prior to demolition of the buildings and

structures, it was necessary for an engineer to perform an evaluation to ensure it was safe for workers to enter or approach. Once this was done, abatement to safely remove hazardous materials from buildings that could be safely entered, and structures that could be safely approached, needed to be undertaken.

For example, friable asbestos was present in many of the buildings and structures on site, requiring the development of detailed safe work procedures prior to initiation of the work, as shown in the photographs shown here.

Personal protective equipment that was required to protect workers from asbestos-related inhalation risks, were the same as those required to protect workers from the inhalation of radioactive particulates.

Once abatement was completed, building and activity-specific safe work plans were developed in preparation for the demolition of the buildings and structures. For example, such procedures provided specifications on the establishment of barriers at the work site, removal of hazards, and the personal protective equipment or PPE requirements.

Demolition was then undertaken to address the physical hazards that are present on the site and the

site is being maintained under a secure state.

In total -- or in 2010, a total of approximately 37 buildings and structures were taken down. In 2011, approximately 47 were taken down along with 16,000 lineal feet of utilidors, approximately.

I will quickly show you some before and after photographs indicating the hazards that have been present inside and outside of the buildings which have now been safely addressed.

For example, this photograph shows the mill building before, and you can see inside and outside of the building, and after -- this is the footprint as it -- as you can see it today.

Here's a picture of the head frame before it was taken down, and the footprint after. Here's a picture of the acid plants before, and the footprint after.

In this photo, the sulphur pad is shown before and after. The sulphur pad, which was cleaned up and fenced off, is now serving as the temporary waste storage compound on the Gunnar site, as you can see in the lower right-hand panel.

Following completion of demolition, a detailed inspection of each footprint was undertaken to identify any remaining housekeeping issues that needed to

be addressed, as well as -- or, as part of our due diligence. For example, tripping hazards, or other types of hazards, were dealt with at that time.

Many of the buildings that have been abated and taken down in 2011 are indicated on this photo by the pink arrows. A notable exception is the dock warehouse which can be seen in the forefront of this photo. The dock warehouse is being used to safely store the friable asbestos until approval of the Gunnar environmental impact statement.

In September of 2011, a site inspection was conducted by the Canadian Nuclear Safety Commission, and it was verified that the work had been completed to close off all requirements in compliance with the CNSC order 10-1. Here is an aerial photo of the site before and after, from another angle.

Site security is being maintained at Gunnar throughout the year through the locking of the gate that has been installed along the Gunnar access road, maintenance of personnel on-site at all times, including in the winter, and maintenance of signage and barriers on-site at the site periphery.

Central to planning of the work is the availability of the winterized road and the logistics and safety and the safe work constructions around it. SRC

managed the construction of an ice road, both in March 2011 and March 2012 to transport equipment and supplies on-site in 2011, and to transport equipment and hazardous materials off-site in 2012. In 2012, the ice road was only open from March 23rd to midnight March 31st due to weather conditions.

SRC did not allow hazardous materials to be transported on the ice road until full loads had been reached, and only allowed transport of HazMats when the provincial ice road was open. No HazMats were transported on the ice road following March 31st.

A total of more than half the HazMats were safely transported off-site and the remaining HazMats are currently being safely stored in the temporary waste storage compound.

The site is currently being managed safely with only localized environmental impacts. Some of the next steps that are being planned as part of the site management are listed here. These include the general clean-up of the site, demolition of foundations, completion of the utilidors, demolition of the docks, clean-up of the shoreline, clean-up of the demolition footprints, and capping of the mine shaft, to meet provincial standards.

With the mitigation of the short-term risks

that had been associated with the buildings and structures, more focus is being turned to the planning of the longer term remediation to address issues related to seepage from the waste rock piles, the unconfined tailings, the mine pit, and the demolition debris that is currently being safely stores in piles on-site until the environmental assessment is approved.

The anticipated schedule of the work that will lead to the approval of the Gunnar EIS is shown here. SRC submitted the Gunnar environmental impact statement in January 2011. Comments on the EIS were received from responsible authorities in April, and SRC organized a face-to-face meeting in May of 2011 to discuss how the comments would be addressed. Follow-up actions were sub-divided into those involving editing of the text for clarification, and those involving further field studies.

The revision of the environmental impact statement was completed in July 2011 and a number of additional field studies were undertaken in support of finalization of the EIS. Field work for those studies was completed in October 2011.

Since the work at Gunnar involves expenditure of public funds, some work that is typically done in support of detailed engineering and licensing has been required to gain approval from the responsible

authorities. SRC is working hard to meet the needs of the responsible authorities to finalize the environmental impact statement.

As planned, SRC has been preparing licensing documentation in parallel with the preparation of the Gunnar environmental impact statement. A conceptual model of the Gunnar licensing package which is a slight modification of the version presented at the January 2011 CNSC Commission update meeting is depicted here.

In general, the licensing package includes a multi-tiered set of documents with relatively broader over-arching documents at the Tier 1, becoming progressively more detailed down to the Tier 4 underlined documents. Many of these documents have been drafted and will be finalized upon approval of preferred remediation options.

The draft documents that are currently under review are listed here. Drafts of these documents have been provided to regulatory agencies.

Additional monitoring is also well underway to establish the seasonal pre-remediation baseline contaminant concentrations against which to compare remediations success during the post-remediation and long-term monitoring phases of the project.

At this point, I'm going to turn the presentation back over to Mr. Joe Muldoon.

MR. MULDOON: So in support of the detailed engineering licensing and project planning, a number of initiatives are underway to ensure the technologies to be used in remediation are ready for implementation upon approval of the Gunnar EIS. This will allow cost-effective planning and streamlining of work in the project.

Currently, there's additional groundwater characterization work that is taking place as we speak which also includes detailed engineering of the tailings cover. There's planning for testing of water treatment technologies at Gunnar in the pit.

The mammal survey has been completed, the field portion, and we've got some field and greenhouse revegetation tests in terms of work on the tailings.

All of this work is in response to the responsible authorities and the project partner needs which is ongoing. Based on the progress to date and from a timeline, both short and long-term project timelines have been developed.

In the short term SRC is anticipating submission of the Gunnar EIS in early 2013 and is working to meet the need of the responsible authorities to meet

this objective and I will say that the timeline is indicated on the slide.

Once the environmental assessment is approved, remediation will be initiated. It's important to note that data collection and support of detailed engineering has already been initiated and will continue for a time following initiation of remediation.

Remediation will overlap with activities required for post-remediation due to the fact that different aspects of the remediation will require different amounts of time to complete and the post-remediation activities associated with a given work task can be initiated or remediation in other parts of the sites are being done.

Once we finish one spot, one area we'll start post-remediation monitoring right away as we move to another part of the sites that we can do in sequence, we can put some of this remediation, some of these tasks together as you would in any project management task.

Long-term monitoring will be done for five to 10 years following remediation with decreasing frequencies as environmental quality improves. Ultimately SRC's goal is to transition the site to the Saskatchewan Institutional Control Program.

I'll just -- just at the end here, I'll

focus on a project end points that have been developed in close consultation with the project partners, regulatory authorities and local communities.

We want the site -- obviously the site does not pose environmental and public health risks, the flora and fauna adjacent to and within the site are not significantly impacted by contaminants. Traditional, use of resources adjacent to and within the site are safely conducted -- very important one for local communities; desire just to have the site managed through the Institutional Controls Program for long-term care and maintenance.

Thank you for your attention. That concludes the presentation.

THE CHAIRMAN: Thank you.

Before opening the floor for questions, I'd like to welcome CNSC staff as outlined in CMD 12-M25.

Mr. Elder the floor is yours.

12-M25

**Oral presentation by the
Saskatchewan Research Council**

MR. ELDER: Thank you.

Good afternoon Mr. President, Members of

the Commission, my name is Peter Elder, I'm the Director General of the Directorate of Nuclear Cycle and Facilities Regulation.

Following the Commission hearing held in January 2011, the Commission requested that both SRC and CNSC staff report back to the Commission on the status of Commission order 10.1 as well as the ongoing environmental assessment efforts and other efforts to make towards bringing the Gunnar site under a CNSC licence.

With me today for this update are Mr. Don Howard, Director of the CNSC's Waste and Decommissioning Division, Mr. Ron Stenson, the Senior Project Officer in that division and we also have other CNSC staff who have worked on this project available to answer questions.

Mr. Stenson will now give the rest of the presentation. Thank you.

MR. STENSON: Thank you. Good afternoon. For the record, my name is Ron Stenson and I'm a Senior Project Officer in the Waste Decommissioning Division and I'm the CNSC lead for the Gunnar file.

As stated earlier, this is an update to the Commission on the order, the EA and efforts towards licencing.

SRC has provided the background for the site as well as details of the successful completion of

the order, progress on the EA and progress towards licencing of the site and CNSC staff's presentation is meant to complement the SRC presentation and to provide staffs' perspective on ongoing activities at the site.

This slide provides geographic context for the site. The Gunnar abandoned mine site is located about 26 kilometers southwest of Uranium City. Apart from a few seasonally occupied cabins and three outfitters lodges, the nearest population centre is Uranium City with approximately 80 people.

From a CNSC licencing perspective, with the removal of the buildings and other structures, the site currently consists of two waste rock piles, a flooded open pit and three tailings areas. Two bays shown here on this map have been impacted by the site, that's Zeemel Bay to the southwest and Langley Bay to the north. The airstrip is still open as you can see towards the upper right-hand corner. But the road south through the site has been gated off to restrict access to the site.

This slide provides a brief history of the site. Essentially the Gunnar Mine was abandoned in 1963 without any decommissioning; the mine remained idle until the remedial work under the CNSC order in 2010.

In 2010, SRC applied for a licence to remediate the site. And in 2010-11, under the CNSC Order

10-1, SRC razed all of the buildings and other structures at the site. Demolition materials were segregated and safely stored on site for disposal under the final decommissioning plan. Hazardous materials were collected and segregated during the demolition and are being managed safely on site until appropriate disposal.

All of the requirements under the Order were verified complete by CNSC staff during their inspection on September 28, 2011.

CNSC staff has verified that the hazardous materials that have been isolated and packaged awaiting safe disposal are being safely managed on site. Most will be shipped off-site by winter road. CNSC staff will continue to verify the storage of these materials until they have been disposed of. Staff will be on-site again in August 2012.

SRC is in the process of completing the EA statement and further characterization and modelling is required before the process of defining the preferred option can proceed. Because the EA is a comprehensive study, the RAs will send their EA report to the Minister of the Environment for acceptance before the EA process can be closed.

The preferred option will need to address a number of issues including the 4.4 million tons of

unmanaged tailings. Also the 2.7 -- I've got the number wrong, I'm sorry -- the waste rock is being characterized to determine how much leaching is contributing to off-site contamination and depending on its chemistry it may also be useful as a cover for tailings.

The flooded open pit needs to be assessed as a potential physical and environmental hazard. There is some evidence that shallow groundwater leaching may be contributing to off-site impacts as well and the extent of this is being investigated.

SRC formally submitted an application for a licence to CNSC in December 2010 and licencing of the site could not continue until the EA has been accepted by the Minister of the Environment.

Physical safety at the site has been dramatically improved with the completion of the work under the Order, site access has been restricted from the airstrip, all other access either by boat during open water or ice roads during the winter, signage exists at all access points.

SRC continues to communicate with local communities and outfitters to maintain a high level of awareness of potential hazards at the site. CNSC staff will continue to inspect the site for safety. I will continue to participate when appropriate in public

outreach with local communities.

CNSC staff has reviewed the available information for the site. Of greatest concern to CNSC staff is the impact of the site on local fisheries. Apart from localized impact on Zeemel Bay, there is no indication of hazards from fish consumption.

Zeemel Bay is well signed at its narrow opening to the lake. And until completion of the EA, little data is available for the terrestrial impact assessment. These signs at the entrances to the two bays adjacent to Gunnar site will soon be augmented by signs from Saskatchewan's Ministry of Environment posting fish consumption advisories.

With respect to aboriginal and public engagement, since 2011 the SRC has maintained very close contacts with local communities and a number of these local meetings have been arranged in Uranium City and two of these were attended by CNSC staff, a public open house in June 2011 and a meeting in September 2011.

In conclusion, SRC has complied with all of the requirements of Order 10-1. The environmental assessment process is proceeding. CNSC staff expects that the EA will be completed prior to the expiry of the current exemption from the licensing requirements of the Act.

The licensing process is also progressing. CNSC will continue to monitor progress in respect of the licensing process and report its findings at a meeting of the Commission in February or March of 2013.

Site safety has improved markedly over the -- with the removal of the many physical hazards under the order. The Gunnar site continues to have small very localized impacts on the environment. CNSC staff have no concerns over fish consumption from Lake Athabasca outside of Zeemal Bay.

That concludes my presentation. I'll pass the microphone back to Peter Elder.

MR. ELDER: Thank you.

Just one additional update I'd like to provide the Commission.

In preparing for this meeting today there have been a number of meetings between CNSC staff and the other responsible authority for this project, which is Natural Resources Canada, as well as the Saskatchewan government who is funding the project and the consultant, SRC, who is working as a contractor.

We have decided that it is best to move forward with a formal protocol between all the key players, to ensure that the Gunnar site is brought under a CNSC licence in a timely fashion.

This is an approach that has been successfully used on the Port Hope Area Initiative and we will copy that model and plan to have a protocol in place that would be publicly available -- we're aiming for the end of this month and this would include trackable progress against deliverables so that we're not waiting until next -- this time next year to see how things are going.

That concludes our presentation.

THE CHAIRMAN: Thank you.

Okay, let's jump right into the questions, and let me start with Dr. McDill.

MEMBER MCDILL: Thank you.

I have only two questions. I enjoyed the video.

First question is; where did all the workers come from? Are they local people or all CNSC and SRC people?

MR. MULDOON: Joe Muldoon, for the record.

We had -- in selecting the contractors for the work we had required that local employment be very -- a very important part of the contract.

We have -- Sask Research Council has its own Aboriginal liaison person that -- full-time with the Council -- full-time with this project, with the Council

to liaise with all of the communities and is actually originally from Fond-du-Lac First Nation.

And we were very successful. We also -- before the contract was awarded, before we'd even gone through it we, through the liaison, and in partnership with some funding programs, federal funding programs, we were able to deliver training to over 100 -- I believe it was over 100 residents in the Athabasca Basin.

At the end of the project -- at the end of this portion of the project we were -- we were able to report that we had over 50 percent of the -- 55 I believe -- 50 percent of the labour force was from the Athabasca region. So we were very happy with the result.

It's never enough in terms of meeting the needs up there but we went in with the intent of providing training that would be transferable, so that even those that chose not to work at the site still had the opportunity to take the training and then would be able to take those skills and apply them elsewhere.

MEMBER McDILL: What kind of trainings, radiation hazards and general health and safety?

MR. MULDOON: General health and safety construction approaches, those kinds of things, very general type that they could also go into the mine site. And there was the asbestos training as well, which was a

big piece. Rad protection, as you indicated as well.

MEMBER McDILL: And did they get a Certificate of Completion or something like that, a piece of paper?

MR. MULDOON: Yes, there was certification provided as well.

MEMBER McDILL: Great. Thank you.

Second question; with respect to the -- last time we were here there was an ongoing issue with an airstrip and a road and a -- what was the outcome of that? I assume some of the meetings have been related to that.

MR. MULDOON: The airstrip is open. The outfitter, that camp was bought by a different outfitter and the strip continues to be operated.

We did not allow access through the site because it was -- obviously we had major machinery and demolition going on, with asbestos in the air, et cetera.

But the airstrip was allowed to be used and was used by the outfitter in -- over in the next bay.

MEMBER McDILL: And the expectation is the airstrip will remain open?

MR. MULDOON: It will remain open in the short term, it could very well be the long-term, it very much depends on what we'll need for cover and just what the numbers add up to in terms of our borrow needs and so

on on the sites. That'll be dictated by the option that we -- that's selected as the best option.

MEMBER McDILL: And staff, do you have any comments on either training or meetings with the public?

MR. ELDER: I'll ask Ron to answer in terms of actual meetings with the public.

I'd just point out that we have reviewed the access control and while obviously the main -- the initial hazard was the buildings, we are also making sure now that it's actually a little more open that we don't want on -- any access to the uncovered tailings until they are appropriately managed.

So our belief is that there is a need to maintain that fairly tight access control to the site.

And I'll ask Ron to talk about the public engagement.

MR. STENSON: Ron Stenson, for the record.

The public is very highly involved. In the SRC CMD there's quite an extensive list of public contact.

When the CNSC is in the area for inspections we've attended anything that's -- any public ongoing activities. Usually there's a question or two that ends up coming our way.

They usually have to do with safety, as opposed to a licensing process, but we have a fairly good

relationship with people in the region.

So there's -- and with regards to access to the tailings, there's two points of access to the tailings to the public, one is through the site, so the gate across the road from the airstrip is pretty effective at reducing that; and the other is to the Langley Bay tailings by boat and there's signage and a lot of public awareness so that people understand what the potential hazards are.

There's no really -- there's no way to really fence that or gate that access but the people are kept informed.

MEMBER McDILL: And if one were to swim there, just by what the sign says, what would be the short and long-term ramifications, if any?

MR. STENSON: Ron Stenson, for the record.

The water quality in the bay is actually quite good. It's -- swimming is not particularly an issue. And even in fish the levels -- contaminant levels are not -- are not horrible. There's a fish advisory in place until more information is available but there's very, very low indication of uptake by fish.

If you want details we have -- Mike Rinker could give you more details.

MEMBER McDILL: Might as well.

MR. RINKER: Mike Rinker, for the record.

Maybe just to put it in context, the Gunnar site does have large releases of uranium and radium from it, it's an important project that does need to be remediated.

The magnitude of the releases are similar to Beaverlodge which are higher than any of the operating mines -- significantly higher than Elliot Lake.

However, it is next to a very large body of water so the environmental footprint of the Gunnar site is fairly small and localized. So it's -- there is some contamination in the local bays, very small bays but not out into the channel.

MEMBER MCDILL: Thank you, Mr. Chair.

THE CHAIRMAN: Okay, I want to make sure I understood what you just said.

So on page 5 of the CNSC report, the second from the bottom, there's a complicated sentence, for me anyhow, starting with, "The evidence of altered benthic invertebrate communities", blah, blah, blah, "support for this hazard assessment." What does it mean? Is there a hazard in there or isn't there, and how serious it is? Every time I hear about altered communities I get spooked.

MR. RINKER: Mike Rinker, for the record.

A hazard assessment is a term that is used, it's a part of an environmental risk assessment, so we're

assessing the hazard of contaminants that may be in the environment.

The benthic invertebrates are the little critters that live in the sediments. They're often the larva of insects and so on. They're also food for fish, so they're important because they -- because the fish eat them, so they're -- it's an important consideration or part of the environment.

And I would say the largest environmental impact that is observed is that the diversity of these benthic invertebrates is less than what it would be in reference areas where there's not contamination.

THE CHAIRMAN: But is that something already observed or is that -- so it's already measured? I thought all of this is going to be discussed in the EA, so I'm not sure this is a theory, if you're going to measure, or it's already measured.

MR. RINKER: Mike Rinker, for the record.

Because this is a remediation project rather than a new mine, a new mine you have no contamination and you're predicting what the contamination is. In this case, the contamination is there and it's measured, and so the benthic invertebrate impacts are -- have occurred already. And what we're predicting is when would it get better.

THE CHAIRMAN: But is it locally or is it throughout the whole bay system, kind of? Is it locally near the tailings or is it pervasive?

MR. RINKER: Mike Rinker, for the record. It's in the very small bays that are immediately adjacent to the site.

THE CHAIRMAN: But not in the larger water.

MR. RINKER: Exactly. The larger water -- even the larger water body that is adjacent to the waste rock in the pit is less impacted than those small bays that are -- they're small and they abut right up against the waste rock and the tailings.

THE CHAIRMAN: Okay, thank you.

Dr. McDill?

I've got to find where I am.

Mr. Tolgyesi?

MEMBER TOLGYESI: Merci, Monsieur le président.

On SRC's report on the last slide, you are saying that flora and fauna adjacent within the site are not significantly impacted. What it means, "significantly"?

MR. MULDOON: I'll ask Tamara Yankovich, Dr. Yankovich, to answer that question.

DR. YANKOVICH: For the record, this is Dr.

Tamara Yankovich.

"Significant impact" what you would typically do is compare the level of impact in an area receiving a stressor, for example, contaminants, and you can compare it to determine if there's a significant difference from baseline unimpacted areas. That's a typical approach that is used.

Often another step to it would be to assess what the importance of, you know, that impact is in terms of the ecosystem structure, so those are approaches that a person may use.

MEMBER TOLGYESI: Because "significant" could be different for you and for me.

DR. YANKOVICH: This is Dr. Yankovich, for the record.

Typically, what is done is there's standards -- like there's guidelines that are -- that are available that -- you know, that are available by regulatory agencies or the -- for example, also, the Canadian Council of Ministers and the Environment, so it's possible to look -- to compare the concentrations or the levels of contaminants compared to these standards.

The other thing that is done is there are standardized approaches and frameworks that have been developed in Canada and internationally that can be used

to come up with a standardized answer that experts in that field can agree with.

MEMBER TOLGYESI: Maybe I didn't start with the right question.

First I want to say that I should underline that you did a big job since the last meeting because I remember the last meeting there was a question that what you could do and what you want to do and what you will do, and I think all the help to orient the work in a sense of orientation and also in volume.

So, this being said, I will have another question on your before-last slide, 31st.

There are three or four steps what you are saying underway, but there is no time frame what you expect, when you expect them to be completed, like additional groundwater characterization, field studies, field and greenhouse vegetation testing.

Is there a kind of timeframe or schedule which you're saying you want -- how it will progress?

MR. MULDOON: Joe Muldoon, for the record.

Yes, there is. The additional groundwater characterization, the engineered tailings, the studies that are associated with that, the -- those particular pieces that our responsible agencies have asked for us -- for that information in advance of completing the

environmental assessment.

That information we were able to utilize the winter road to -- that one-week period to get a drilling rig out on site and the groundwater characterization, hydrogeology work is currently underway with the intent that that information would be brought forward in the fall for us to then be able to feed that into the environmental assessment.

The water treatment technologies, the revegetation, those will extend out past the period because they will not have to be implemented until we're, you know, much further into the project. And they will take longer.

The revegetation, we've got work -- on-site work as well as work with the revegetation looking at different seeds species and so on at -- also at the greenhouses at Saskatchewan Research Council in Saskatoon.

That work will be underway over several years so that by the time that we've completed the remediation of the tailings, we will have the right vegetation mix, the right seed mix and the sources available to be able to very quickly move into that.

So there's -- the first two or three bullets of those, they are going to be done to feed into the environmental assessment. The latter ones on that

slide will be fed into as we -- as we start to deliver the actual remediation itself.

MEMBER TOLGYESI: And when you're talking about the tailings, they are like CANMET in Ottawa here, they do some work on the revegetation and tailings quality and there are some universities also which are doing research for tailings revegetation.

Now, you know, when you are talking about mines and old mines -- in this case we are talking about the old mine which was operating '53 to '64 -- you are saying that engineering of caps for openings are underway.

Now, usually, do you have these openings well located and well documented because usually what's the problem, that we cannot find where these holes are and what's under, and so it's a little bit difficult and it could happen that we will miss some.

MR. MULDOON: During the demolition phase of the project, the major -- we were -- that site, we've walked that site in particular looking for the utilidors which were dispersed throughout the site. We were required to walk that site foot by foot, almost, in terms of finding the different hazards.

So we have done that. We're pretty confident that we're -- confident that we have found and signed and fenced off the hazard areas.

Underneath the major cap has a -- has a cement cap in place now over the original mine opening. That is in place, but what we want -- what we plan on doing is bringing an engineer or engineers on site to ascertain as to whether or not that cap is sufficient, whether it is going to meet the needs of this site going into institutional controls, that kind of thing.

And if not, then what would we have to do to bring it up to scope. Would we have to bring in a stainless steel cap, what would that look like? How would we anchor it down?

So it's that kind of front-end work -- we're trying to do that kind of work now so that as soon as we're ready to implement, we've got all of that done.

MEMBER TOLGYESI: One you were talking on your presentation -- it's page 106 -- about traditional knowledge and traditional land use.

Could you elaborate, have you integrated traditional knowledge into the -- this restoration?

MR. MULDOON: Joe Muldoon, for the record.

As part of the environmental assessment process, we worked very closely with the Prince Albert Grand Council which encompasses all of the First Nation and Métis -- there's a group there that encompasses all of the First Nation and Métis groups, and we asked the Prince

Albert Grand Council to carry out a traditional knowledge study which is included as part of the environmental assessment package, with the intent that we didn't miss any of the traditional knowledge which was part of the scope of the work when we undertook it.

So we ensured that Elders were contacted and interviewed and all of that information was collated into what would constitute appropriate -- what was traditional use on the site prior to the mine and what would be appropriate traditional use after remediation.

So we -- that traditional knowledge study is part of the environmental assessment and has been completed.

MEMBER TOLGYESI: When we met last time I remember you were talking about this access to the mine site because there was some hazmat's and contamination; you were talking about asbestos.

So do you monitor the impact of the demolition on -- do you have any weather samples which they show there is an impact in the time when you were demolishing and it's a regression or it is not?

MR. MULDOON: Joe Muldoon, for the record.

Prior to the demolition starting, we enhanced, increased -- significantly increased our monitoring stations directly around the site to do exactly

that; it was to monitor whether or not there were impacts from the demolition and whether there were some hazard -- some contaminants that were leaking that we might not have seen on surface.

So there's quite an extensive monitoring program that still continues but that was started prior to the demolition, yes.

MEMBER TOLGYESI: It will be good see, you know, it's a progress of what's there, if it's -- what happens.

And it's the same thing for soil, the contamination. Because when you were moving this material and asbestos and whatnot ---

THE CHAIRMAN: Just to remind, they will be coming -- just correct me if I'm wrong, they will be coming in front of us for the environmental assessment and the licence ---

MEMBER TOLGYESI: Okay.

THE CHAIRMAN: --- in 2013, and all the data will -- hopefully all the data that Mr. Tolgyesi just talked about will be in that environmental assessment.

Is that correct?

MR. MULDOON: Joe Muldoon, for the record.

Yes, that is correct. With respect to the asbestos specifically, we did daily monitoring of the

asbestos and then adjusted our -- if it was necessary to make work adjustments then those were made.

But that was -- obviously the number one driver there was for worker safety but there was also an environmental driver there as well.

MEMBER TOLGYESI: And my last -- you were using ice road to move hazardous material. Did you monitor, was there impact? Because on an ice road if you lose material eventually it will sink, and so did you do some monitoring on the ice road and how you will ensure your clean-up, et cetera?

MR. MULDOON: For the hazardous waste there's a number of things that we did. First was we only had that -- the local communities in the area they access and use those roads well past March, very much depending on the weather.

This year was a very tough year because we had very poor -- depends on how you look at it I suppose -- but very warm weather in the early part of the winter and so provincial highways, irrespective of the weather, they will open the road when it's safe and they will then set the weight limits, depending on the thickness of the ice -- pretty extensive testing that's done as a result of that.

Irrespective of what the weight -- of what

the weather does come March 31st they shut the road down.

We felt that it was important that we not -- so first we waited for full weight. We could have transferred -- we could have put in half loads and those kinds of things early on and we chose not to do that, we chose to wait until we had full weight.

So in other words we were very risk adverse in terms of moving the haz waste. They were monitored in terms of the loading and monitored in terms of -- when they got to the end of the road and then there was regular traffic on and off, so that we were very careful in the monitoring or in how that haz waste was moved.

We chose to not move haz waste past March 31st, number one because the weather wasn't very good, it was warming up very quickly and number two, we just did not want to take the chance that we would moving haz waste in a road that wasn't provincially certified. So we did monitor that all the way through.

Anything -- any material that was found on the road in any way, shape or form, it was monitored and it was cleaned up.

THE CHAIRMAN: Thank you.

Monsieur Harvey?

MEMBER HARVEY: Merci, monsieur le président.

My first -- it's not a question, it's mostly in line with what has been said by Mr. Tolgyesi; is to congratulate SRC for the job done.

Because if we read on page 3 of the staff CMD, that CNSC staff is satisfied with SRC's performance and notes that it has, in certain areas, exceeded the CNSC staff's expectations.

It's not frequent to see that in the evaluation of our staff, so we've got to congratulate you for that.

My second comment is about the impression given by some sentences. And in page 15 of the staff presentation we can read, "The Gunnar site continues to have small localized impacts on the environment".

And one would say that how come if it's so that we have to devote so much resources, time, and efforts on that site?

I mean maybe it's just a question of how it is written and presented but the public could say, "Well why are they doing so much on the site if it's so?"

MR. RINKER: Mike Rinker, for the record.

I guess I just wanted to clarify or emphasise that the purpose of the project and what they're going to be coming for a license for is to clean it up.

So it's environmental performance and

what's being -- you know, impacting to the environment is probably at its maximum now and when the project proceeds then things will get better.

So I think if we were to accurately report how is the facility performing, it's not performing that great and that's why it's required for the government to provide some resources and to have this strong clean-up effort.

MEMBER HARVEY: But it might be difficult for the public to understand that, that if it's small impacts and then we have to do that.

It's just a comment anyway.

Third point is the -- on page 11 non-radiological and radiological substances that have accumulated in sport fish are at the levels that are safe for human consumption.

And then on page 15 we got, CNSC staff have no concern over fish consumption from Lake Athabasca outside the Zeemel Bay.

So it's in -- two sentences are not consistent.

MR. STENSON: Ron Stenson, for the record. I can't -- I don't have a page 11.

MEMBER HARVEY: Page 11 and 15 in the presentation, not in the text.

MR. STENSON: I'm sorry. I just want to quickly see what I said there to respond.

There are -- there's two aspects to this; the first is that there's mildly -- you can measure some contaminants in small fish. There's very few contaminants in the large fish, which are the sport fish.

And so what we're primarily talking about here is when people are going to consume fish they're going to consume sport fish. And we don't have real issues -- any issues with people catching outside of Zeemel Bay. We don't have any issue with people catching and consuming the sport fish, the ones that people would normally eat.

Some of the ones that they feed on have higher levels of course but people don't generally eat those.

And the second is that we also -- there's also -- the Saskatchewan government has put a fish advisory -- a fishing advisory on the two bays, as they call it, as a precaution because there's thousands, literally, of places to fish which are better fishing and have no evidence of any contamination.

So by putting the advisory on it it's cautioning people that, you know, these -- Go fish, you know, five minutes down the road. It's just -- it's part

of the precautionary principle.

So the two things seem like they're in conflict but they're not particularly in conflict, it's really applying the precautionary principle, and we don't really have concerns about the larger -- the larger fish.

MEMBER HARVEY: Thank you. I understand that.

THE CHAIRMAN: Wait a second. I can accept the difference between near the tailing and outside the tailing, fine.

But the small fish are contaminated then, you know -- you know how the hierarchy goes, the large one -- the cumulative effect is if the large one eats the small one, and the small one is contaminated, then the large one will be contaminated.

So I'm not buying that explanation. I just buying it, go downstream to somewhere else. Is that what you're trying to say?

MR. ELDER: Well, I'll ask Mike Rinker to say, because we do look at this cumulative effect, and are you seeing this in the bigger fish, so I'll ask Mike to answer that.

THE CHAIRMAN: Please.

MR. RINKER: Mike Rinker, for the record. We do have data to support that position,

that the sport fish fish tissue levels are below the threshold that we would be concerned about human health concerns.

And it does biologically make sense because the larger sport fish -- they are larger, and they don't live in the small areas. Where the small forage fish may reside permanently in those small bays, the larger sport fish would travel up and down and into the deeper lake and move around. So their exposure to that area of contamination would be -- for a duration, it'd be much less.

THE CHAIRMAN: You don't eat those contaminated small fish who don't live in their neighbourhood.

MR. RINKER: That's correct. Or they eat very few of them. They have other food sources.

THE CHAIRMAN: Okay.

Monsieur Harvey?

MEMBER HARVEY: One last question. On page 5 of the CMD, right at the bottom of the page, it's the level in aquatic biota, especially fish, second -- would be required if traditional land use scenarios are to be achieved.

I understand that we touched that point a moment ago but when will those scenarios be completed and

when will the decision be taken in relation with that because it's like something will have to be done if there is something else.

So -- I don't know if you catch what -- my point. It's -- a certain measures will have to be taken if the scenarios are to be achieved.

MR. HOWARD: Just to clarify, is that page 5 of staff CMD or ---

MEMBER HARVEY: Yes, yes.

MR. STENSON: It's Ron Stenson, for the record.

The point of the remediation is to achieve those. So the question of when would those conditions be achieved would be tied to the completion of the remedial activities and the demonstration that the technologies are performing as planned.

So I think on this slide that SRC was looking at, we're looking at between 15 or 20 years.

MEMBER HARVEY: But my understanding is that you've got to know the scenario to determine what will be done. So before to do anything you've got to determine the scenarios.

MR. STENSON: Mr. Muldoon has already pointed to the fact that they've done the traditional knowledge surveys, so they know what the traditional land

uses were and would potentially be, and that will feed into their -- into the work that they're going to be doing to perform and complete the remediation.

MEMBER HARVEY: But that will be presented in the impact assessment. You will have the answers ---

MR. ELDER: That's -- yes, ---

MEMBER HARVEY: --- of the scenarios and what has to be done.

MR. ELDER: One of the -- Peter Elder, for the record.

When you get the environmental assessment, one of the big portions on this one will be to look at various options. And looking at do these options meet all these requirements and what has to be done to make sure they're done, you know.

So this is -- I guess what we were trying to point out is saying we talked a bit about those bays that are contaminated, and the information we have today would say, you do need to do something about that contamination if you're going to turn the site back into its traditional use.

And so one of the options have to make sure that you are addressing those sources of contamination on the site, which are the tailings and the rock piles.

MEMBER HARVEY: We'll have the answers next

year.

MR. ELDER: Yes.

THE CHAIRMAN: Okay, thank you.

Ms. Velshi?

MEMBER VELSHI: Thank you.

A question for SRC. In Slide 8 of your presentation you provide the timeline for your phases of remediation. And the CNSC staff in their presentation mentioned that both the licensing process and the EA process is moving slowly.

So the question to SRC is how confident are you with this schedule and what do you see as being the key risks to not meeting this schedule?

MR. MULDOON: Joe Muldoon, for the record.

We've got this schedule in place. We are confident that -- given the work that's currently underway and given that the analysis of that work by consultants, SRC is -- in most of these cases, we contracted outside consultants, experts in the various fields to do this work.

As long as the science is acceptable to the responsible agencies, and we feel that the work that's currently underway is enough to be able to -- to get us to the point of -- and, as you saw in our presentation, to get us to this point, we feel that we can make these

timelines.

Within -- where the challenge come is -- and again it's all about the site and the remoteness of the site, that if we have to go in and do additional major work, that would have to be part of the environmental assessment, well then, that pushes things back because we can't get in there, we can't get equipment in, it's very difficult.

And our operating period in there in and of itself is very limited. So we feel that given the work that has been taken to date, and the work that's currently underway, as long the science that comes out of that work from the consultants is -- that's acceptable to the responsible agencies, then we should be able to meet these timelines.

MEMBER VELSHI: Thank you.

So I'll ask the question of the CNSC. When you said both those items, the EA and the licensing process are progressing slowly, did you mean slow compared to what the schedule is or just slow because this work by its very nature takes along time?

MR. ELDER: Peter Elder, for the record.

We would say they're slow compared to what SRC was telling the Commission last time they were here.

So it's against the schedule, and we

recognize that they have submitted one version of the environmental assessment that went to the responsible authorities and there were some additional work required.

One of the things that is a bit of a complication on this one is that there are two responsible authorities, there's the CNSC, who has a safety mandate, and there's also Natural Resources Canada that obviously wants to make sure that the work is done safely, but also is interested in making sure this is done in an economically appropriate fashion as well.

And one of the things recognized -- that we have recognized is that we need to make sure that the responsible authorities are not sending mixed messages to the Proponent.

So that's where we're looking at making sure there's more routine dialogue between all players involved on this one, and that it's very clear to SRC, as the Proponent, what are the key pieces of information that we need to see in that environmental assessment and try to get those pieces early so that we have some confidence, when the final package comes up, that the options there included are appropriate -- are what all the players view as the appropriate ones.

MEMBER VELSHI: Thank you. So is this the protocol that you mentioned, the payouts ---

MR. ELDER: That's correct.

MEMBER VELSHI: --- that you're working on.

MR. ELDER: And one of the protocols we've done is to make sure that there are published timelines that everybody can be measured against.

THE CHAIRMAN: Okay, can I jump in? I think it's time to bring our responsible authority who's sitting quietly here, Mr. McCauley, he's not going to get off the hook.

What we want to hear from -- first of all I would like to know what is the total budget for this project, because I assume how much it costs is a factor in all of this.

You can have different kind of option for environmental assessment, and I'm sure that many of those options have different price tags and one is to do a balancing between costs and impacts.

So I'm just wondering whether the deficiency in the first EIS had to do with some money or lack thereof, but more importantly what is the care and the location of budget for this project for the next 35 years if I see the schedule here; all the way to institutional control?

MR. McCAULEY: My name is Dave McCauley, for the record. I don't think that I can comment on the

full budget for the project, because really a preferred option has not yet been defined by the proponent.

What I can give you some information on, however, is the funding that has been allocated to the project through a memorandum of understanding between the Government of Saskatchewan and the Government of Canada. And in that agreement there's a budget of \$24.6 million that is to be shared equally between the two parties, so \$12.3 million a piece.

And our funding in that memorandum of understanding is divided or apportioned to particular activities, such that Canada's funding is limited only to kind of environmental restoration activities as opposed to decommissioning, et cetera.

So basically that's the situation with the existing funding, and as I mentioned I think that what we have to do is we have to find out what the preferred option is and how that option is going to be implemented before we can really get budget numbers. But maybe I might defer to the SRC for -- if they wanted to comment on that.

THE CHAIRMAN: But just so I understand, so two questions.

Out of the 24 million how much was spent to- date? And secondly, so if there is a million cost

there's opportunity to go and ask for more funding, is that -- you know, once the environmental assessment will be available and submitted to you, and let's assume it requires more funding, what's the process, to go back to governments and ask for more money?

MR. McCAULEY: Well, so we have -- Dave McCauley for the record.

We've been provided with \$12.3 million that's the Federal Government, our half. And the expectation is that that's the limit of our funding under the memorandum of understanding.

What the agreement says is that if -- it first of all says that costs will be managed such that they don't exceed \$24.6 million. And then secondly it says that if costs do exceed then there will be discussions between the province and the Federal Government.

THE CHAIRMAN: And how much you spend to-date, anybody knows? SRC?

MR. HUGHES: Cory Hughes for the record, Government of Saskatchewan. Currently to-date there has been over \$40 million spent.

At the end of this year we'll be close to 50 million.

The Government of Saskatchewan has been

required to -- we took out a special warrant of 38 additional million dollars and have put several other million, into through operating funds, to keep the project going.

We are continuing to hold discussions with NRCan on funding issues to get additional Federal commitment, including the original 12.3 which we have only received 1.1 million of, so ---

THE CHAIRMAN: I'm speechless. So to-date, just so I understand the amount. So to date there already something like \$50 million spent?

MR. HUGHES: By the end of this year that's possible.

THE CHAIRMAN: By Saskatchewan alone?

MR. HUGHES: Yes. The cost of the Order and the timelines associated with the Order to get that equipment on site the SRC did take out a tender, they may be able to speak to that and manage that contract actually under the original budget.

However the majority of the spending was associated with the Order and the building takedown to-date.

THE CHAIRMAN: So help me understand the math, so there is no more money in the kitty here, or all the 50 was Saskatchewan and there's still the 12.3, a big

chunk of the 12.3 still left from the Feds?

MR. HUGHES: That's correct, yes. And there's still -- we've recently, working with the SRC, approved their budget for this year which is primarily getting additional information that has been required to move the project forward. At the end of that point then both funding agencies will hopefully be in negotiations to get additional funds.

THE CHAIRMAN: Well, what I get is some urgency for you guys to complete this study and get the environmental assessment done as soon as possible.

Ms. Velshi, sorry for doing a side trip here.

MEMBER VELSHI: So the hazardous materials that you weren't able to ship out, this is for SRC, because of the winter road conditions. So when do you expect to ship out the balance of the 50 percent, or whatever it is still left on site; and what's the risk of keeping it on site longer?

MR. MULDOON: Joe Muldoon for the record. We have people onsite, because we have a camp set up there, and of course there's ongoing work. And there's a lot of equipment there over the winter that had been left by the contractor to continue with some of the clean-up on the demolition.

We have staff, there was a two person shift there 24/7 all winter long, and we'll continue with that throughout the year. So the material is as shown in the presentation, PowerPoint presentation is in a locked facility fenced off in a secure location on site with staff on site 24/7. So, in case, I mean, properly stored as well. So that the hazardous material is in a safe location with respect to what's left on site.

We have a couple of options to move that haz waste off. We know that we're going to have a winter road, whether it's next year or the following year. It will probably be next year that we'll have to put another winter road because some of the equipment -- the contractors could not get some of their equipment off site because the road was -- they needed to leave some of it on to continue with the work this field season.

We could move some of that material some of the haz waste off by barge, but I don't believe that we are -- where our thinking is now is that we will not do that; there's too much risk involved with loading it on the barge, loading it off the barge.

The numbers of times that you handle material, the fact that you're then moving through open water and quite an expanse, Lake Athabasca's a very large lake. We feel that the safest way to move that haz waste

is still by winter road.

So we will keep it secure, we will continue to have personnel on site until such time as I would suspect will be next winter, we'll push another winter road in and then we'll move it off site then.

MEMBER VELSHI: So I know you say it's secure, but I thought from the pictures it was actually sitting in a pit all those bags, the sulphur pad or so, isn't that -- is that where that hazardous waste is?

MR. MULDOON: Joe -- sorry.

MEMBER VELSHI: Sorry. Out in the open?

MR. MULDOON: Joe Muldoon for the record. We have all of the friable asbestos in that warehouse that was shown in the -- which is highly -- that's something that you don't want those bags cut into.

Any of the other material is in barrels or double-sealed bags, et cetera. In the open area, but it's fenced off and it's on a cement pad so that there's no -- and it's checked on a regular basis, we feel that it is secure.

MEMBER VELSHI: Okay. My last question is around public support or public engagement with your activities. There's a comment in the CNSC's CMD on page 8 that mentioned perceived lack of communications with local residents. It's on page 8 of CMD 12-M25.

So I'll ask SRC, what's your comment on that?

MR. MULDOON: Joe Muldoon, for the record.

We feel that we've worked very hard in establishing and maintaining a good working relationship with all of the communities in the Athabasca Basin.

There are situations where we'll never make everybody -- somebody always isn't going to get the job, somebody always isn't going to be happy with the way that we're carrying out the work.

I don't know what particular example we would -- I might have to ask CNSC staff. But for the most part -- I mean, the relationships are always tough.

We're, you know, considered to be from the south, we're moving -- we're back in the northern community. The mine was -- has always been a scar and seen as bringing contamination to the local communities.

We are, in a sense -- and I don't mean us as in SRC, but I mean just all of us are kind of associated with being responsible for that kind of activity in the first place.

So when you go in and you try and clean it up, you create employment opportunities, you work with the communities, you ensure that from a traditional use perspective that we're going to meet their needs.

But it's hard. It's very difficult. Rumours always are difficult to deal with. Something that may have happened or, in most cases, didn't happen gets built and it gets -- you go from one person to the next person to the next person, and by the time it's out, it can be something very different.

So we're -- that's why we have a full-time Aboriginal liaison person that deals with that stuff, can call up the Chiefs of the various First Nations, meet with Métis, et cetera to where we try and ensure that that relationship is maintained.

But I won't pretend that it isn't difficult, and we do have our difficult meetings and our times. But I think for the most part we have been told that we have done more than any other agency in the north in terms of front-end consultation and working with the communities.

MEMBER VELSHI: Thank you.

Staff, do you have anything to add to that?

MR. STENSON: Ron Stenson, for the record.

To clarify, the -- it was -- the stress should really be put on the "perceived" lack of communication. We were -- when I wrote the paragraph, I was putting in the issues that were being addressed primarily at the meeting.

And as Mr. Muldoon has alluded to, there's -- some of the more contentious issues are people that misinterpret communication or that feed off rumours and so on.

And I think that they've been handled very well, so it's really the -- it's the sense that they're perceived as opposed to they are.

We don't -- CNSC doesn't see a lack of communication there.

MEMBER VELSHI: Thank you.

THE CHAIRMAN: Dr. Barriault?

MEMBER BARRIAULT: Thank you, Mr. Chairman.

I'd like to reiterate the fact that I'm very thankful for all the work that's been done and I would like to say congratulations to all parties concerned.

Having said that, obviously some ways to go yet. I guess I never realized the impact that our meeting had had last year on getting things done.

Now, I know it would have happened, I don't know if it would have happened as fast as it did. But anyways, I'm certainly happy with that.

Having said that, I just have a few questions, really.

During the demolition, did you have any

lost time injuries, anybody injured or anything?

MR. MULDOON: Joe Muldoon, for the record.

Happy to report that we had no lost time injuries on site, which is really ---

MEMBER BARRIAULT: Fantastic.

MR. MULDOON: --- I don't want to say unbelievable. It's very unusual in a site like this with demolition and with the site in that condition that we're able to do that.

So that's in strong measure to Dr. Yankovich and obviously to the contractors onsite as well.

MEMBER BARRIAULT: Very, very good.

Next question, really, is with regards to the risks that are remaining, obviously there's the tailings and there's the rock pile.

Is there any risk left now from asbestos or other materials that are on site, PCBs, or is most of that gone now?

I know there's asbestos there, but the PCBs and the other toxic chemicals.

MR. MULDOON: Joe Muldoon, for the record.

All of that haz waste material has been collected and stored and it's ---

MEMBER BARRIAULT: Stored.

MR. MULDOON: --- stored in secure

facilities in secure containers as well, so all of that.

The friable asbestos is in a locked building. As I said, we have staff -- there are people there 24/7.

MEMBER BARRIAULT: Now, it's being moved off site. Where's it going as its final resting place?

MR. MULDOON: The asbestos will stay onsite itself. Any of the PCBs, any of the mill debris, those kinds of things, depending on the nature of the contaminants, some of it's going into Alberta. Some of it will be coming to Chalk River.

MEMBER BARRIAULT: Okay. Next question, really -- and maybe this will be dealt with in the environmental impact. I'm not sure.

With the -- you had the, I guess, monitoring stations for asbestos fibre during demolition and you use an approach by combining detergents and water, I guess, to keep the fibres down.

Was there much fibres in the -- or many fibres in the air in this collection of vacuum systems that you had set up?

MR. MULDOON: Joe Muldoon, for the record.

We had an independent asbestos expert onsite, in addition to the contractor having their own expertise there as well, and monitored it independently,

and there was very little.

The controlled environments -- to go into some of those old buildings, I mean, they covered them with plastic, they got the reverse seal so ---

MEMBER BARRIAULT: It was well done.

MR. MULDOON: --- and they were able to maintain -- the contractor that we chose has done this kind of work before. They brought in haz experts that have worked with asbestos.

And as I say, then we had our own expert onsite and they -- as opposed to kind of looking over each other's shoulders, they collaborated and made sure that they got the job done right.

MEMBER BARRIAULT: Very good. Thank you.

Next question really is that -- you mentioned that you're going to do some detail engineering now as to managing these tailing ponds and piles.

How detail are you going into this? Are you going to put it back to the way it was or just as an abandoned site?

MR. MULDOON: Joe Muldoon, for the record.

We will -- we'll never be able to bring those -- a site like that, we'll never be able to bring it back to what it was.

MEMBER BARRIAULT: Okay.

MR. MULDOON: The intent is to identify the contaminants of concern, figure out how they're moving through the system, which I think we're very close to being there, and then more than anything, really, encasing those contaminants, that the tailings won't be moved -- or the intent is not to move them.

The intent would be to cover them, ensure that the surface -- when you understand how the contaminants are flowing, if they primarily flow over the surface of the tailings, so therefore we want to cover those tailings from a gamma perspective and also from an infiltration perspective, but then also manage the surface flow -- surface runoff over those tailings to make sure that the surface water is not going to be picking up contaminants as an example.

MEMBER BARRIAULT: Okay.

MR. MULDOON: So each one of those areas, depending on the option -- the final option that is selected, will then dictate how we will be dealing with those contaminants. But the intent would not to be where we can bring that site back to pre.

So when we talk about traditional use, the intent is that we would not want nor would allow long-term use of somebody camping on the tailings as an example.

But they should be able to hunt off the

tailings or fish off the tailings, or very close. This is 15, 20 years out. And without the risk of having whatever they're hunting or fishing for have contaminants working through the ecosystem.

MEMBER BARRIAULT: Right. During the demolition -- and maybe CNSC can answer this -- you used dosimeters with alarms on them as opposed to, I guess, traditional. What was the reason for that or was it -- were they chosen by ---

MR. MULDOON: Joe Muldoon, for the record. I'll ask -- if you get too detailed here, I'll ask Dr. Yankovich to continue.

But the intent was if somebody, for instance -- a worker was off in an area, let's say, close to the tailings or someplace, the alarm would signal and they would move away from that site very quickly.

So it's more to -- so that was -- that would be a short term exposure which would not necessarily cause a problem, but if they stayed on that site for a longer period of time or there were spots where they shouldn't be, the alarm would serve as a reminder, "No, you shouldn't be here. You've got to move on".

And I think what it did then was it helped in terms of the total worker dose, to keep those total doses down. And it was also for the shorter term workers

onsite as well.

DR. YANKOVICH: Dr. Yankovich, for the record.

Nuclear energy workers -- people who were designed as nuclear energy workers if they spent more than a total of four weeks on site working or on site at all.

Nuclear energy workers at Gunnar were issued both a thermal luminescent dosimeter -- I can't speak -- TLD, which is the traditional way, plus an alarming dosimeter so that they could find, if there's, you know, a higher level.

MEMBER BARRIAULT: Right.

MS. YANKOVICH: All non NEWS that were present on site for shorter periods than four weeks in total were issued just an alarming dosimeter.

MEMBER BARRIAULT: And do you have any results of what the highest doses were of exposure?

MS. YANKOVICH: Yeah, the highest doses -- yeah, it was 1.39 or something like that I believe. Yeah, it was 1.39 millisieverts per year and when we did -- we did some estimations of the worst-case scenario and we were getting values of over 10, so like in the maximum case we were an order of magnitude lower. The median was .53 millisieverts per year, so that was the typical on site.

MEMBER BARRIAULT: Very good.

That's all, Mr. Chairman. Again, thank you ever so much for clean-up.

THE CHAIRMAN: Okay, thank you.

Any other -- anything else?

Well first let me start again by complimenting you on the video. I liked the video and the question is; are you posting it anywhere? Are you putting it on your website?

MR. MULDOON: Joe Muldoon, for the record.

It is on the Sask Research Council website and it's also on YouTube as well and actually doing quite well.

THE CHAIRMAN: That's good. You're getting lots of hits? Have you got any -- there's any internet connection to the local communities? Can they actually take a look at it?

MR. MULDOON: Well, if they have access to internet, which most of them do or many of them -- I shouldn't say most, many of them do. The video -- the problem is if you don't have a higher speed system it's very difficult to access video.

THE CHAIRMAN: Why don't you send it to them or show it to them.

MR. MULDOON: Yes, when we go to meetings

we'll be bringing these with us.

Thank you.

THE CHAIRMAN: Let me understand, you mentioned that your aim is to go to institutional control. I'm just -- nowhere in your charts does the long-term monitoring under institution control or is institutional control looks like it's going to come in in 2035?

MR. MULDOON: Joe Muldoon, for the record.

I would -- Cory, you can speak to this as well. The intent of the institutional controls is that once we do the remediation we will -- we obviously model what the contaminant levels will be or how they will be reduced. We monitor to show that that reduction is in fact taking place.

It's usually -- and again the Institutional Controls Program is very new but I would think that we're planning five to 10 to possibly 15 years, I would say 10 probably in the best scenario, where we've done the monitoring, shown that our projections are in fact happening.

We would then approach the Institutional Controls Program and say here's what we've got. So that would be 10 years following remediation -- 10 to 15 years following remediation, and it would be at that point that we would plan on having -- hope that the site would then

go into institutional controls.

THE CHAIRMAN: I would imagine the Ministry -- Saskatchewan has lots of experience with institutional control. I think they already have some properties that went to -- under that Saskatchewan government.

MR. HUGHES: Yeah, the program was brought in a few years ago. We do have several projects in institutional control now.

And maybe our colleagues with Sask Environment that are on the line could speak specifically on how that monitoring and maintenance -- because it would be -- the maintenance would be signed off by Sask Environment that allow the program to enter into institutional control.

THE CHAIRMAN: Okay, Sask Environment, are you still online?

MR. MOULDING: For the record, Tim Moulding with the Ministry of Environment in Saskatchewan.

Basically for entry into institutional control the Ministry of Environment will write a letter of recommendation to the -- for Energy and Resources to have that basically says that the decommissioning work has been completed to our satisfaction. And on sites that are subject to regulation by the CNSC, one of the other things that we require for that is an exemption from licensing

before it can enter into institutional control.

Again, we do have some of the satellite sites around the Beaverlodge operation and around Uranium City that have already entered into that program now, so...

THE CHAIRMAN: So right now everybody is still in waiting mode to see what comes out of this process?

MR. MOULDING: I think everybody agrees too that there's still some work to be done on the site before we can even contemplate them being finished their decommissioning work.

THE CHAIRMAN: Mr. Elder?

MR. ELDER: I just want to add a very similar statement. You know, there will be -- obviously part of the -- when you design your remediation is also designed what sort of post-remediation you're -- monitoring you're supposed to do and what the protected -- what the predicted impacts you're expecting to see.

So we want to see at least some outputs from that monitoring program to show that the predictions are matching the reality and then we go into discussions about transferring to institutional control.

So I think you're looking at five to 10 years into that long-term monitoring program range.

THE CHAIRMAN: I'm just reacting to this

long-term chart here that shows -- takes us all the way to 2035, without ever mentioning institutional control.

I thought that somebody should take the time to say, okay, that's our target.

MR. ELDER: Yes.

THE CHAIRMAN: And work towards it and if it doesn't materialize you can change it.

Okay, just to close, I just want to reiterate what I heard and what I thought I understood; that early January to March 2013 SLC will be coming back to us on environmental assessment and maybe the same time on licence application where all the details and recommendation will be there.

And as a result of the so-called protocol between all the parties we may even know how to finance it moving forward.

Did I get all of this right?

MR. ELDER: We need to -- well, part of -- Peter Elder, for the record.

Part of the protocol will be to make sure that we have a realistic schedule to get to what you're -- to get you there because what SRC is saying -- was saying today is that they plan to submit their EIS.

That needs to be reviewed, there has to be some public consultation on that one. So we'll work out

the full timeline to make sure ---

THE CHAIRMAN: But that's the second draft, right? You already had an old EIS for all year.

MR. ELDER: But I'm not sure it has to have -- make sure it has public comment as well.

So yes, we think we can turn around quicker but there are still some process steps and as you're aware, there are proposed changes to the *Environmental Assessment Act* and that we have to fully understand how those will impact this project and we're trying to look for all of --- hopefully there is -- it introduces some efficiencies in the backend, the approvals.

THE CHAIRMAN: Okay.

Anything else, anybody wants to add anything else?

Okay, thank you. Thank you very much.

Okay, go ahead, Marc, tell us what are we breaking for?

MR. LEBLANC: Well, we're going to break until five past four and we're going to resume with the annual report from DNCFR.

THE CHAIRMAN: Okay, thank you everybody.

--- Upon recessing at 3:56 p.m./

L'audience est suspendue à 15h56

--- Upon resuming at 4:12 p.m./

L'audience est reprise à 16h12

**4.2 Performance of Canadian
Uranium Fuel Cycle
Facilities: 2010**

THE CHAIRMAN: I guess we lost a lot of the audience here because I guess they figured it's only a dry run.

Okay, on a serious note, the next item on the Agenda is a presentation by CNSC staff on the performance of Canadian Uranium Fuel Cycle Facilities in 2010, as outlined in CMD 12-M26.

Mr. Elder, the floor is yours.

12-M26

**Oral presentation by
CNSC staff**

MR. ELDER: Thank you. Good afternoon Mr. President, members of the Commission. For the record my name is Peter Elder, I'm the Director General of the Directorate of Nuclear Cycle and Facilities Regulation.

With me at the front table today are Mr. B.

R. Ravishankar, Director of the Nuclear Processing Facilities Division and Monsieur Jean LeClair director of the Uranium Mines and Mills Division.

We also have staff who have been involved in the preparation of this report here in Ottawa, and also joining us from the CNSC office in Saskatoon.

At this point we would particularly like to mention the efforts of Ms. Ann Erdman in Ottawa and Mr. Mark Langdon in Saskatoon in putting together this report.

We're here to present to the Commission our CMD 12-M26 on the performance of Canadian uranium fuel cycle facilities for 2010.

This report is the first of what will be an annual performance report presented to the Commission. While the report -- this report is a standalone document, it also establishes the framework for future annual reports, and so we are presenting it at this time to gain feedback from the Commission on the overall content and structure, mainly because the Commission has been requesting such annual reports in recent licensing decisions.

Since this is a first of its kind I'm going to spend some time on the structure of the reports and also how we see it as evolving in future years.

The backbone of the report is performance

data that is obtained from the licensees and compliance reports, as well as from CNSC compliance inspections and other efforts.

We have started with the 2010 report, since this is the year that we had the complete set of data recognizing that licensees' annual Compliance reports are usually required to be submitted in March or April of the following year. We just received the 2011 data within the last couple of weeks.

One of the advantages we see of an annual report, that it allows for comparison between similar facilities and we will be presenting such comparisons today by industry sector. In the future we will also add comparison with non-nuclear facilities where appropriate.

It's important that you note that the report before you today only covers part of the regulatory work done by directorate. Actually I think you've seen a variety of that work today in other aspects.

So I want to explain how we plan to -- what the reporting universe will be looking like for all the facilities that are under the Director of Nuclear cycle and Facilities Regulation.

I've grouped them here by categories. We're treating the Chalk River Laboratories as a standalone, because it actually contains a number of Class

I and Class II facilities, as well as radioisotope labs, and it's also a complex site with a number of follow-up issues coming from a licence renewal in 2011.

So for the time being we will be presenting a standalone performance report annually on Chalk River starting at the first one in this fall.

The next group of facilities is the university based research reactors and noting that most of these will be up for licence renewal in 2013.

Working towards then is to add them to future versions of the annual compliance report, annual performance report.

Operating mines and mills are covered by the current report, as are uranium processing facilities, so these are the bulk of the active operating facilities covered by the division.

For the next version of the report and for the 2011 we will be expanding it to include the nuclear substance processing facilities. These are the tritium processors like SRB and Shield Source, as well as Nordion that does a lot of processing of medical isotopes but also other industrial isotopes. We think this is a useful group to put together the similar type of issues around those facilities.

Remaining groups, waste management

facilities and decommissioning projects will be added in the future years, but we are working on what -- how we would present that type of information given that they are quite different than the operating facilities, and some of the performance measures will have to be adapted to those types of facilities.

So as I've mentioned this report focused solely on the uranium fuel cycle facilities. This is an area where we have a good common set of performance data and that we can make reasonable and accurate predictions, comparisons between facilities.

I would note that most of the information in the report has been presented to the Commission at license renewals or facilities mid-terms in another format, but that the comparisons and the sector overviews are new.

We have also included the performance data for individual facilities because this is what we plan to do in the future, and we also recognize that there are readers in the public that will want to focus on a particular facility. The intent was that both the sector overviews and the facility information could be read independently.

The report is divided in two parts on each industry sector, and while we do provide a table with

performance ratings in all of the 14 standard safety and control areas we have concentrated on three areas that provide a good overall indication of the safety performance and allow for relevant sector comparisons.

These are radiation protection, environmental protection and conventional health and safety.

We have also included annexes that contain trending on performance data and the ratings, and we have also tried to include links to the licensees' websites where more information and more detailed information on compliance reports is available.

So in terms of -- we want to stress that we really are interested in getting feedback today and that this will help guide our 2011 version of the report that we plan to present in the fall of 2012.

As noted this will include the nuclear substance processing facilities, and as has been the practice with the power reactor performance report for the next version there will be opportunity for public input prior to it being presented to the Commission. And finally we would also be intending to publish the final report on the website.

Besides the performance data in those three areas we also include in the report updates on areas where

we have increased regulatory focus, either follow-up from previous areas or new areas, major events or developments for these facilities if they are appropriate.

We also comment on regulatory changes such as changes to the licence. And as licence condition handbooks are developed for all these facilities, changes to the handbook and progress against key improvements in the handbook will be included in the annual report.

I would note that none of these facilities discussed in this report were actually working for the full 2010 under a handbook. But certainly in the future, revisions to the handbook would be a key part, or a standard part of the report.

I will now turn it over to Mr. LeClair to continue on the section focusing on uranium mines and mills.

M. LeCLAIR: Bonjour monsieur le président et les membres de la Commission. Mon nom est Jean LeClair, je suis le Directeur de la Division des mines et usines de concentration d'uranium.

Part 1 of the 2010 annual report summarizes the performance of the operating uranium mines and mills in Canada which are all located in the Athabasca basin of Northern Saskatchewan.

It repeats much of the information

presented to the Commission in last year's midterm reports for chemical corporations mine and mill facilities.

There are four facilities operated by Cameco Corporation and one site operated by Areva Resources. The Key Lake and McClean Lake of existing mills, and no currently operating mines.

The Rabbit Lake site has both an operating mine and mill, while the McArthur River and Cigar Lake projects have underground mines and no mills.

Key Lake, Rabbit Lake and McArthur River were all in production in 2010. The McClean Lake Mill was in a safe shutdown state awaiting new sources of uranium ore. The Cigar Lake mine was under construction.

The next few slides present the performance ratings and supporting examples for these facilities. The 2010 performance ratings at each of the sites for the 14 safety and control areas is provided in this slide. CNSC staff rate each safety and control area based on the results and observations from compliance and licensing activities.

The regulatory requirements and the level of staff review for each safety and control area takes into consideration the facility-specific activities and the risks that the activities comprise. For example, the Cigar Lake mine which is currently under construction

presents limited risks in the area of radiation protection since there is no active mining of uranium ore.

In contrast, the McArthur River mine is in full operation and subject to increased controls and oversight in the area of radiation protection.

For 2010, all five facilities received a satisfactory rating in all 14 safety and control areas.

With regards to trending, from 2009 to 2010 the ratings for the fire protection portion of the emergency management safety control area improved from below expectations to satisfactory for four of the facilities.

Key Lake also improved the ratings for the management system, safety control area from below expectations to satisfactory. Additional details on explanations for the 2009-2010 ratings changes are provided within the facility-specific sections of the report.

The uranium mines and mills operations have continued to maintain and implement comprehensive radiation protection programs. The average worker dose in 2010 for all uranium mines and mills facilities was well below the regulatory limit of 50 milliseverts per year.

Average exposures were consistently below 2 milliseverts per year, with the higher exposures being

attributed to underground mine workers in operating uranium mines.

Based on inspections and reviews CNSC staff were satisfied that uranium mines and mills licensees are keeping doses as low as reasonably achievable by adequately controlling radiation doses to levels well below regulatory limits.

In considering the environmental impacts from uranium mining and milling the general public expressed its concerns with regards to potential impact from releasing nuclear substances into the environment.

Over the last few decades Radium-226 has been the radionuclide of particular interest at operating uranium mines and mills.

Regulatory requirements for treating effluents to remove Radium-226 and monitoring and controlling its release to the environment have been in place for several years.

The annual average radium concentration in treated effluent released to the environment in 2010 remained well below the licence limit of .37 Becquerel's per litre at all uranium mine and mill facilities. This level of performance has been in place for several years.

Since 2007, following the declaration of uranium as toxic under the *Canadian Environmental*

Protection Act, uranium releases to the environment became an area of an increased regulatory focus.

In response, the operating uranium mines and mills undertook several initiatives to improve water management practices to reduce uranium releases to the environment.

In 2010, the annual average uranium concentration release to the environment from all uranium mine and mill facilities and treated effluent was well below the limit -- provincial limit of 2.5 milligrams per litre.

In 2008, the Rabbit Lake mill installed additional process controls to reduce uranium in their treated effluent. The results of these improvements are shown on the next slide.

From 2008 to 2010 Rabbit Lake reduced uranium concentration effluent through the addition of a uranium reduction circuit and other process, pH and chemical controls. Based on improved operating results Rabbit Lake lowered its action level to .3 milligrams per litre, and an administrative level of .1 milligrams per litre to ensure adequate controls and response are in place to keep the releases of uranium as low as reasonably achievable.

In more recent years, molybdenum and

selenium were identified as contaminants of increasing regulatory concern and led to increased regulatory expectations for improvement.

This slide displays annual average molybdenum concentrations in treated effluent released to the environment in 2010 at the five mine and mill facilities.

While no regulatory limit from molybdenum is in place, each uranium facility was required to implement improvements in their facilities and engineering controls to lower releases of molybdenum to the environment.

Each facility was required to set specific action levels or targets to keep molybdenum releases as low as reasonably achievable. The action levels are facility-specific.

The action level of 1.1 milligrams per litre displayed on this slide represents the Cigar Lake Project Action level.

This slide presents data on selenium releases to the environment from operating uranium mines and mills. As previously noted, selenium releases have been the subject of increased regulatory focus in recent years.

While no federal limits has been

established for selenium we've included existing provincial limit as a point of reference.

In 2010 the annual average selenium concentration in treated effluent released to the environment from all uranium mines and mills facilities was well below the provincial limit of .6 milligrams per litre.

The next slide highlights trending data for selenium releases at the Key Lake mill. The releases of selenium at the Key Lake mill were identified as being of particular concern, given the potential cumulative effects of long-term releases to the environment.

In early 2009, Key Lake installed a molybdenum/selenium removal circuit to improve the effluent treatment process.

Molybdenum and selenium concentrations and effluent and their loadings to the environment have been significantly reduced and continued monitoring in the receiving environment is expected to demonstrate stabilization or improvement in the coming years.

Based on the effectiveness of improved effluent treatment process systems and consistent with the ALARA principles Key Lake established specific administrative and action levels for improved operation control of control as selenium as shown on this slide.

You will note that the action level is well below the provincial limit of .6 milligrams per litre.

All uranium mines and mills licenced by the CNSC must develop, implement, and maintain effective safety programs to promote a safe and healthy workplace. The key performance measure of conventional health and safety is a number of lost time incidents at each site.

In 2010 the types of LTIs (Lost time incidents) occurring at these sites were generally related to slips, trips and falls. When compared across the entire mining and industrial sector, uranium mines and mills are ranked among the best performing facilities in accident prevention.

If I can just relate back to the previous presentations and discussions with regards to the Gunnar Lorado site, I noted that the comment was made there were no lost time incidents as a result of their activities.

To give you a point of comparison, Rabbit Lake and Cigar Lake have somewhere in the order of 450 to 500 employees working there full-time and in 2010 there were no lost time incidents at the mine sites.

These are very important records and in the future report I hope to include more comparisons with other mines and other industrial sectors because these numbers are actually -- are quite good, they're very

strong performance with regards to overall conventional safety.

THE CHAIRMAN: Since you raised that, that was one of my thing, it would be nice to see any benchmark against any mines, either domestic or international. If you can actually do those comparisons it would be really good.

MR. LECLAIR: Yes. I think one thing we'll be looking at for the mines and mills is the comparisons on performance cross everything, including even environmental performance, we can include some data on how their environmental performance compares to other mines and we certainly will be looking at that. Yes.

So carrying on, with over 20 years of operations and response to anticipated increases in demand for uranium, the operating uranium mines and mills have been undergoing numerous changes and improvements to extend the life of existing operations to increase production and to conduct remediation activities.

So when we say they're active uranium mines and mills, they certainly are very active in all shapes and forms.

In 2010 there were ongoing plan improvement and revitalization activities at all the facilities. They were undergoing licencing reviews and environmental

assessments or were at various stages of implementation.

Further details on these improvements and revitalization activities are provided within facility-specific sections of the annual report.

This concludes the uranium mines and mills part of this presentation.

Mr. Ravishankar will now provide an overview of Part II of the annual compliance report focusing on the uranium processing facilities.

MR. RAVISHANKAR: For the record, my name is B.R. Ravishankar from the Nuclear Processing Facilities Division.

Good afternoon, Mr. President and Members of the Commission.

There are five uranium processing facilities in Canada; all are located within the Province of Ontario. They are Cameco's Blind River refinery, Cameco's Port Hope conversion facility, Cameco's fuel manufacturing facility in Port Hope and General Electric Hitachi Canada's Peterborough and Toronto facilities.

The two GE Hitachi facilities operated under separate licences in 2010, but in 2011 they were combined into a single licence.

Therefore, this report include performance data for both facilities but only one rating for safety

and control areas for the licensee.

In 2010, CNSC staff performed 24 inspections at the five facilities. The report includes the 2010 performance ratings for the five uranium processing facilities.

The licensee's requirements to satisfy each safety and control area are generally dependent on facility-specific activities, and the risk that those activities may pose.

CNSC staff rate each safety and control area based on the results and observations from the compliance and licensing activities.

For 2010 all five facilities received a satisfactory rating in all 14 safety and control areas, with the exception of the waste management, safety and control area at Blind River refinery which was rated as below expectations.

The annual report identifies the performance trends. There were only two safety and control area rating changes in 2010, from 2009. For the Port Hope conversion facility, the human performance management area trended up from below expectations to satisfactory, and as mentioned below -- before, the performance in waste management at Blind River refinery trended downwards, from satisfactory to below

expectations.

This figure on Slide 22 provides a comparison of annual average effective dose to workers at each uranium processing facility, from 2006 to 2010, which is an indication of radiation exposure to nuclear energy workers.

Each facility is unique in regards to the type of work performed, and each provides varying programs to mitigate radiation doses to workers.

The resulting doses are based on complex and differing work environments. Therefore, direct comparisons between facilities in terms of occupational dose are difficult to make.

However, the CNSC requirement to apply as low as reasonably achievable requirement has consistently resulted in doses well below the regulatory limit.

CNSC staff is satisfied that all uranium processing licensees in 2010 adequately controlled radiation doses to levels well below the regulatory limits, keeping doses ALARA.

This slide presents a table of maximum effective doses to a member of the public in a year, resulting from each uranium processing facility, calculated using environmental monitoring results.

In 2010 the doses to the public continue to

be well below the regulatory public annual dose limit of 1 millisievert, and negligible in comparison to the amount of radiation dose Canadians receive from natural background radiation sources. The table also includes, for comparison purposes, the dose to the public for 2008 and 2009.

Environmental Protection: All uranium processing facilities control and monitor liquid and atmospheric releases of nuclear and hazardous substances to the environment, both through the stacks and also through liquid effluent monitoring program.

To confirm the effectiveness of emission abatement systems in place and to monitor the impact of uranium emission from the facility on the environment, facilities operate high volume air samplers.

These are operated around three Cameco facilities and the GE Hitachi Toronto facility. The GE Hitachi Peterborough facility does not use these samplers, as the uranium releases from the stack at Peterborough are so low that the uranium in air is not detectable by the state-of-the-art sampling equipment at the perimeter of the site.

The results from the high volume samplers for 2008 to 2010, shown in this figure, indicate that the maximum annual average concentration of uranium in ambient

air, measured around any uranium processing facility, was less than 0.003 microgram per cubic metre for 2010. This is well below the new Ontario MOE air standard of 0.03 microgram per cubic metre for uranium, that will take effect on July 1st, 2016.

Slide 25 shows the annual average uranium concentrations in soil for 2008 to 2010, near the three Cameco facilities.

Soil monitoring programs are intended to monitor the long-term effects of air emissions to show whether there is accumulation of uranium in soil in the vicinity of the facilities.

The results for the Port Hope conversion facility is based on measurements taken at a soil monitoring location near the facility, which was prepared specifically to monitor accumulation of uranium in soils from the ongoing operations of the facility.

CNSC staff is currently looking into the possibility of similar soil monitoring location near the Cameco fuel manufacturing facility, in order to determine the extent of uranium deposition from its ongoing operations.

The two GE Hitachi facilities do not conduct uranium in soil monitoring as part of its environmental monitoring program, as the uranium releases

to the environment are very low, and the environmental risk assessments indicated that soil monitoring is not warranted.

The performance data in 2010 show that average annual uranium soil concentrations, observed in the vicinity of the facilities, continue to be well below the most restrictive Ontario MOE's soil uranium guideline of 23 micrograms per gram, for residential or parkland land use.

The table on Slide 26 presents the number of recordable lost time injuries reported by all five facilities in 2009 to 2010.

A recordable lost time injury is defined as a work-related injury requiring professional medical assessment and treatment, where the employee is not able to return to work for their next scheduled shift.

The frequency of recordable lost time injuries reported by all facilities has remained low from 2008 to 2010. The one lost time injury in Peterborough, at GE Hitachi facility, was related to a hand injury to a lathe operator and it did not involve nuclear materials.

During 2010 the uranium processing facilities conventional health and safety programs continue to be rated satisfactory, and GE Hitachi's program was rated fully satisfactory. The fully

satisfactory rating was granted because the program was well-developed and has been consistently satisfactory over several years.

CNSC staff conclude that the uranium processing facility licensees have been implementing their conventional health and safety programs satisfactorily during 2010, and their programs are effective in protecting the health and safety of persons working in their facilities.

This completes the presentation on uranium processing facilities section.

Mr. Elder will now summarize CNSC staff conclusions.

MR. ELDER: Thank you.

In conclusion, for the uranium fuel cycle facilities presented in this report, CNSC staff conclude that their overall performance was satisfactory for all the facilities, noting that there were no major events at any of these facilities, and the workers, public, and the environment were protected.

As we stated before, our intention is to present a similar report for each year, starting -- and that will compare facilities and licensees with industry sectors, as well give the overview for the particular calendar year.

So this finishes our presentation and we are looking for your feedback on this presentation -- the report.

Thank you.

THE CHAIRMAN: Thank you.

Let's jump right in, Dr. Barriault, we'll start with you?

MEMBER BARRIAULT: There's some things that I would like to see, and one obviously you commented to is the fact that if you wait a little later you can give us a 2011 report at the same time, so that would have been useful.

And is there any downward trends in 2011 that we should be looking at, just a quick aside?

MR. ELDER: We haven't -- Peter Elder, for the record.

We haven't finished the 2010, some of the date is just coming in. We don't know that there would -- that said, we will be including Shield Source, so I'll -- I think there will be further discussion around Shield Source in the future. There are certainly some downward trends in that area.

What we looked -- in terms of why we represented the 2010 is we felt we needed to have a starting point and it was important that we get -- we

really wanted to get your feedback on this one before we went into Version 2 of it, and we felt we had a complete set of information.

Some of the information is new to the Commission, the GE data for 2010 hasn't been presented before, and so we've looked at -- there were some information that was new and that was worthy of it.

The one thing I would also like to note at this point was when we come back in the fall we intend to invite the licensees to be present to be able to answer at least general questions on some facilities.

Intent would be if there was a major issue, this would probably not be dealt with through the annual report, but could be dealt with as a specific meeting item. But certainly for -- we would expect the licensees to be able to answer questions as well.

MEMBER BARRIAULT: My next question really, during the year even when we don't have this report coming through, but if any industry falls below expectation in any of the parameters, can we be flagged on that? Is that possible, or is it impossible?

MR. ELDER: Well, I guess our impression is we do these ratings on a roughly annual basis.

MEMBER BARRIAULT: Annual basis, okay.

MR. ELDER: So we don't -- now if there was

a particular event in where it's obvious, you know, without -- we will bring you events based on our event reporting criteria.

MEMBER BARRIAULT: Yeah.

MR. ELDER: Where we don't think about this as, down-rate the whole program or not, we will be, you know, it's obviously a specific event that has to be brought to the Commission's attention.

So we don't want to use this report to sort of wait and then tell you something, by the way something happened that you should have known about months ago.

MEMBER BARRIAULT: Yeah.

MR. ELDER: There's a separate process using the event notification to make sure there's timely communication of significant events. And if a significant event led to a down rating that would also -- obviously that would be a reason to bring you it ---

MEMBER BARRIAULT: Because the ---

MR. ELDER: --- in front of the Commission.

MR. BARRIAULT: --- is improve it. This is probably what you would have to do to get feedback to the industry and to the Commission.

MR. ELDER: Yeah. And, you know, this is - bear in mind this is a report that is focused on the Commission and the public. If we see a problem even a

minor one during inspection, that is communicated to the licensee right away.

MEMBER BARRIAULT: Yeah.

Next question, what is an effluent acute lethality test?

MR. LeCLAIR: An effluent acute lethality test is a requirement under the metal mine effluent regulations?

MEMBER BARRIAULT: Yes.

MR. LeCLAIR: What it is, is they take a water sample of the actual effluent, they put it in like an aquarium, they put trout fingerlings in the water and they leave them there for I think it's 96 hours and they test to see if any of the fish have actually died. So they call it a acute lethality test, because the test says if it's acutely lethal or not, so that's what the ---

MEMBER BARRIAULT: And if they die they give the fish to the plant manager, is that what they -- no.

MR. LeCLAIR: With that actually that's -- it's an interesting question, because there's actually -- that is actually one of the things that we can bring forward. Because it's a metal mine effluent regulation requirement we have national data.

MEMBER BARRIAULT: M'hm.

MR. LeCLAIR: So this would be a good piece of information that we can see bringing forward at a future presentation, because we can show how the other mines are doing around the country.

MEMBER BARRIAULT: And certainly it's a good idea really to see what's going on.

You've had two spills at the McArthur River. What was the incidents of these, what was these spills all about really, and how extensive were they?

That's on page 26.

MR. LeCLAIR: I'm going to pass it over -- I'm not sure if he'll be able to answer or not, but I'll pass it to Mark Langdon in Saskatoon. I assume he's available here. He might be able to get into that detail, because I'm not sure.

MEMBER BARRIAULT: Okay. Welcome Saskatoon.

THE CHAIRMAN: Welcome, I didn't know you were online.

MR. LeCLAIR: Perhaps if I could just ask because there's two other staff from the Saskatoon office, if maybe the three of them can introduce themselves so you know who you're looking at.

MEMBER BARRIAULT: Okay.

MR. LANGDON: Hello, my name is Mark

Langdon.

MR. STEWART: My name is William Stewart.

MS. WALLACE: My name is Lacy Wallace.

THE CHAIRMAN: Welcome, welcome aboard. So now answer the question.

MR. LANGDON: You were looking at page 26?

MEMBER BARRIAULT: The spills at McArthur River.

MR. LANGDON: It's page 25.

MEMBER BARRIAULT: Okay, I'm at the wrong version, I'm at the old version I think. So what were the spills at McArthur River and how extensive were they?

MR. LANGDON: Well we don't have any data on the actual spills. All I could really say is that all the spills were cleaned up to the applicable site criteria and there was no residual environmental impacts.

MEMBER BARRIAULT: Okay.

MR. LANGDON: Corrective actions were associated, were identified and associated with respect to these spills by the licensee, and they were acceptable to the CNSC staff.

MEMBER BARRIAULT: Okay. So -- go ahead, I'm sorry.

MR. ELDER: Yeah, sorry. These were discussed for the reason, I noted this when I read the

draft and said, they were discussed in more detail in the midterm, which is why decided not to go into them ---

MEMBER BARRIAULT: Okay.

MR. ELDER: --- in that one. They were both -- there were two, one was a -- when we say reportable spills essentially anything is reportable. One was in the litre of -- one was a relatively large spill of treated effluent that didn't actually go where it was supposed to go.

So it was about a thousand litres of treated effluent that didn't deposit right into the outlet of the creek, it sort of went somewhere else, it would not have any impact because it's actually already been treated.

MEMBER BARRIAULT: Okay.

MR. ELDER: The other one was a very small amount and we're talking litres of I believe it was oil or something.

So in the future when we put this one, is we didn't put the details on this one --

MEMBER BARRIAULT: Okay, that's fine.

MR. ELDER: -- as it were to sample, but yes when we say it. And this is type of things I like to point out. When we say we will use our notification report, if there is ever a significant spill you will hear

about it through the early notification report.

MEMBER BARRIAULT: Communication report.

MR. ELDER: And that is one of our clear criteria that anything spilled that has any environmental impact or potential environmental impact you will hear about through their early notification, not through an annual report.

Almost saying when it's in an annual report it's saying they told us about it, they reacted appropriately, but the actual details are not that --

MEMBER BARRIAULT: Okay.

MR. ELDER: -- that interested in.

MEMBER BARRIAULT: Just my last question.

Would it be possible to have a separate table, or a table for decommissioning funds, because we saw today how expensive decommissioning can be? And especially with the mines up north where you're working under a much different condition than you would be in a southern area.

So just my own, you know, my own benefit I guess to see if indeed they would have enough funds for decommissioning if the need rise or whatever. So I don't know how the rest of the people feel about this, but I would find it useful.

Thank you. That's all Mr. Chair.

MR. LeCLAIR: I guess what I could say is certainly one thing we can bring forward is all the mines, the active mines have financial guarantees in place, and we certainly could provide a table that just identifies what the dollar values are for all the existing mines.

Of course Gunnar and Laredo financial guarantees didn't exist at the time, but at least it would provide some point of comparison relative to what the estimated costs are for the existing mines when compared to this situation.

Gunnar and Lorado is a bit even unique from a remote perspective also because it's been so many years that there's no established infrastructure anymore, so that adds even more cost than what you might see at a Rabbit Lake or a Key Lake, for instance.

MEMBER BARRIAULT: It would because, you know, at least if I had a crystal ball what I can see in the future is that a lot of these streams, rivers and lakes will probably have to be dredged to get rid of all contaminates really if we keep on the present trend, because we've reached a point of almost zero tolerance for contamination of our waterways.

That's all Mr. Chairman, thank you.

MR. ELDER: What I would just say is that the goal has always been is that you don't, for the

existing mines, and there was some talk about when we were looking at -- when we said is, you know, Gunnar and Lorado is not operating and is actually the releases to the environment are probably an order of magnitude more than the operating mines.

So just from natural leeching you're getting more out than an active circuit. So there has been a significant increase in the improvement in the technologies. But certainly decommissioning funds I think a table is not a problem to add as an appendix of the decommissioning funds.

Because it is one of the things that we will include to changes. If there's been change in the decommissioning fund we'll be highlighting in the text, but the table is not impossible to do.

THE CHAIRMAN: Thank you.

Monsieur Harvey?

MEMBRE HARVEY: Merci monsieur le président.

Bien, je voudrais d'abord, à l'instar de mon collègue, féliciter le personnel et j'ai ben apprécié la façon qu'il s'est présenté, quelque chose de compact qui donne une idée générale.

Je pense qu'il faut cependant, et vous l'avez un peu mentionné, prendre attention de comparer

directement les facilités, les installations parce que c'est pas -- ça donne pas une idée de l'effort consenti mais que ça rencontre les normes.

Parce que certaines installations ont beaucoup plus de difficultés à être -- à avoir des émissions plus basses que l'autre, donc, il faut faire attention, je pense.

Et je sais pas qu'est-ce qui peut être fait pour ça, mais ça donne une idée générale que tout est satisfaisant mais -- et pour appuyer mon propos, j'irais à la page 12 de votre présentation. C'est 12 et 14.

Quand on voit que même si c'est satisfaisant que une installation émet ou -- émet dans l'environnement 800 fois plus que l'autre, ben y faut faire attention d'interpréter les chiffres de cette façon-là parce y dirait « Est-ce que » -- si on regarde du côté ALARA pis des efforts consentis pour aller au maximum, on dirait « Bien, y font pas assez d'efforts. » Ce qui peut ne pas être le cas.

Fait que c'est des choses peut-être à souligner. Et c'est là que la proposition du président de mettre le plus de -- s'il y avait des références internationales et autres, à côté, ça nous permet d'avoir une meilleure idée où l'entreprise se situe.

M. LeCLAIR: Moi, je pense que peut-être

pour toucher un peu ce que vous venez de dire, on peut sûrement fournir un peu plus d'information pour donner même un peu plus d'information pour expliquer que 1) comme vous dites, si il y a un facteur de 10, un facteur de 100, c'est pas nécessairement un indicateur qui a un problème aux installations parce que, souvent, quand on touche ces aspects-là, ça dépend de la caractérisation du minerai.

C'est rarement une fonction des activités de traitement. Des fois, c'est des circonstances spécifiques au site. Mais ça, on peut sûrement ajouter ces informations-là pour donner un peu plus de perspective

MEMBRE HARVEY: Je pense que ça serait utile pour pas aller vite aux conclusions qui seraient fausses de toute façon.

Dans une dernière -- un dernier commentaire, c'est -- je regardais -- c'est la page 23 et je pense que c'est tout de suite 24. Lorsqu'on regarde la concentration d'uranium dans l'air ambiant, si je prends par exemple, Hitachi Toronto, ce qui est orange dans ce cas-là, c'est plus haut que Blind River.

Par contre, si on va à la page précédente, la -- dose to public, ben, Hitachi est plus bas que Blind River. Je me demande c'est quoi le phénomène?

M. RAVISHANKAR: Oui, je regarde le Slide

24 et 25. Ce qui est important ici, c'est que la dose de Gamma est le côté principal.

That's the most important one when we look at the dose to public. On the other hand, the uranium in air, it's a particle contamination that measures the concentration and ambient air.

So that is the difference between ---

MEMBRE HARVEY: C'est ça la raison.

Sur la même page 23, mon dernier commentaire parce qu'on dit « background ». C'est quoi le niveau du « background » normalement? Est-ce qu'il est en de ça de la capacité de mesurer? Si non, il serait peut-être bon de l'indiquer pour qu'on puisse voir si on est loin de -- si, mettons, Port Hope est loin de Hitachi Toronto. C'est quoi le « background »?

M. ELDER: C'est une bonne question parce que il y a deux facteurs. Quand à calculer une dose au public, c'est nécessaire tout le temps de substracter le « background » et connaissez, il y a un gros nombre -- au Canada, le dose c'est entre deux et trois millisieverts.

MEMBRE HARVEY: M'hm.

M. ELDER: Donc, c'est quand il dit « Qu'est-ce que c'est le -- pour GE Hitachi, est-ce que c'est le différence entre le 'background' et le 'measurement' au bord de la facilité? » L'installation

est le même.

Quand vous considérez les différences et « incertitudes » dans les « measurements ».

MEMBRE HARVEY: M'hm.

M. ELDER: Donc, c'est peut-être de dire c'est -- qu'est-ce que -- dans les rapports prochains, on verra expliquer ---

MEMBRE HARVEY: Une petite explication.

M. ELDER: --- explication. C'est -- pour nous, c'est une fait -- mais c'est une différence, quand on dit une comparaison, c'est pour tous les années, on comprend ça.

Mais quand on dit une comparaison entre les deux facilités, il y a une différence ici. Pourquoi? Est-ce que c'est correct? Oui, c'est -- les numéros sont corrects. Mais il est nécessaire d'expliquer la différence.

MEMBRE HARVEY: Une petite formule.

LE PRÉSIDENT: Non, non, non. Il faut trouver une autre manière de présenter ça.

Based on fence line, radiation management is worse explanation than -- it doesn't do anything because if it's background then it's two millisieverts.

So either you add everybody two millisieverts then you measure -- you know, from

background up or you give the sensitivity of the measuring machine?

MR. ELDER: Right.

THE CHAIRMAN: Which is .0 -- whatever it is; we can actually do the sensitivity of the measuring machine and you put it below -- you know, you do below 000, whatever it is.

MR. ELDER: Yes. And that's -- we will do that for future ones. What does that mean in terms of below?

THE CHAIRMAN: Right.

MR. ELDER: Yeah.

What we didn't want on this one ---

THE CHAIRMAN: This is very misleading this way.

MR. ELDER: It is but this is how it's been -- we also didn't want to contradict how it had been reported.

THE CHAIRMAN: We know what we mean by background. Everybody who reads and actually look at our background can vary between two millisieverts than eight, will look at it with different eyes.

MR. ELDER: Yeah, we understand that. And we'll correct that for the next one.

LE PRÉSIDENT: Monsieur Harvey?

MEMBRE HARVEY: C'est tout.

LE PRÉSIDENT: C'est tout.

Okay. Dr. McDill?

MEMBER McDILL: Thank you. I enjoy reading it.

My comments are almost exclusively -- well, actually they're exclusively editorial and they're mostly so that next year it's a little easier.

For example, if you look at your slide deck 14 and 15, you have action levels reported and that's -- it's good that there are action levels reported but they're in the same colour as some of the mines.

And in some cases, that may be intentional and in other cases, it's not. So we have one in 14 where you have an action level that looks like it's McLean Lake, it might actually be and the next one is a red one which is -- states provincial limit but it's the colour of McArthur River.

So if you could go through all of them and -- I don't know, make a dotted black line or dotted yellow line or whatever.

MR. ELDER: I think we'll try to get a colour-coding or something to differentiate standard -- what's a provincial limit, what's a federal limit and what's an action level.

THE CHAIRMAN: Sorry, while you're on it, on 14, you may want to do something and say that there is no -- I don't know if it's true but I understand there's no provincial or federal limit.

Is there or are they coming now with a particular limit?

MR. ELDER: Well, we're looking at how you would have set limits for these ones and this was driven by two things; there isn't a limit.

THE CHAIRMAN: But that's what I'm saying.

MR. ELDER: Yes.

THE CHAIRMAN: You can put a footnote that there is no -- there's no -- because everything else is a regulatory limit and whenever there is no regulatory limit, you should make a comment because I'm always looking what is the regulatory or health limit.

MR. ELDER: Yeah. And the other thing we should be clear about, we've used provincial limits, not because we think they're right, it's just a point of reference. On some of these we know the provincial limits for uranium and selenium are under review and we would actually -- we have taken action on mines that have not gone anywhere near those limits.

THE CHAIRMAN: I know but -- I don't want to get -- you shouldn't try to do too many things in one -

--

MR. ELDER: No.

THE CHAIRMAN: try. If we have a fight with the province limit ---

MR. ELDER: I don't want to -- it was ---

THE CHAIRMAN: -- or it's temporary or it's not approved, you can put a footnote.

MR. ELDER: Yup.

THE CHAIRMAN: Rather than saying we don't agree with it. If we beat it, we may as well ---

MR. ELDER: As long as we're beating it ---

THE CHAIRMAN: Right.

MR. ELDER: Right.

THE CHAIRMAN: Dr. McDill?

MEMBER McDILL: Thank you.

I was pleased to see a couple of fully satisfactory in one of the charts, on page 20, that was nice to see, There's a below expectations also, but that's -- maybe that'll be gone by next year.

In terms of ---

THE CHAIRMAN: Excuse me, you're raising some of the same issues and I figured I would jump on it.

So, this was very good on one slide but on Slide 8 -- I think it's slide - is it Slide 8?

Okay, if you look at them they're all SA's;

right? All of them SA's.

It begs the question whether we should seriously think about our rating, whether we should have only three rating, SA, BE, US, I guess US is unsatisfactory, when we shut them down? Something like that? Because I think that it's very painful to staff to give anybody FS.

I'm not -- I am not doing policy as we go along but you may want to think about this because we've just heard the whole morning, I didn't see an FS, anywhere.

So here is the first time we do see two FS. So, you may want to rethink the whole rating system.

MR. ELDER: We will take that into consideration but we recognize that we need to match with what other -- how we're reporting it on power reactors and everything else as well to be consistent.

The only thing I'd like to note is that this type of rating scheme, we only really started with in 2010 and it does take -- you know if you look at the definition of fully satisfactory, it's actually said that there's a trend of good performance.

So as you get -- you know, and some of these we just not give them fully satisfactory because we don't have that trending data and as we get it -- and you

will start to see more as we rate them more frequently; every facility every year, you will start to say, "Yes, I have a good trend there. I can give it fully satisfactory".

As long as the performance doesn't deteriorate but I understand and I think I've said this before, regulators don't like to give high, you know, don't like to give A's, as we always think there's something that you can prove.

MR. LeCLAIR: If I could add to that actually, because I'd like to maybe reflect on some of the comments that come from the licensees as well.

Because the licensees are also not necessarily as comfortable with fully satisfactories, which may seem odd, but once you're at fully satisfactory there's only one direction you can go, which is down.

And if you were fully satisfactory and then you come back at the next meeting and you're now satisfactory, what does that mean? What does that mean in terms of the discussions and the dialogue?

THE CHAIRMAN: I can tell you, you can make some good argument that a pass, that's -- as a regulator, that's all we care about. It's -- you know, it's a pass. Now if you want to get a little bit more refined, then you have to use it. Otherwise, if you don't use it then it

loses its utility.

Anyhow, it's just a suggestion for you to think about.

Dr. McDill?

MEMBER McDILL: I want my brain surgeon to have more than a pass.

(Laughter/Rires)

MEMBER McDILL: If I could ask, since this is a document and this is a dry run, if your editors could go through and hunt for all the big K Kilograms and all the metres cubed that aren't superscripts and all the axis fonts that change from one page to the next.

These are tiddly, tiddly things, but it makes the document so much better for you.

MR. ELDER: And we fully understand and one of the things that we -- frankly, we underestimated on this one, was how long that final editing takes.

MEMBER McDILL: It takes, yes it's brutal.

MR. ELDER: So we've tripled the time for final -- for the next version we've tripled the time for final editing. And it will be done by our professional editors as well. They did a quick one on this one but they would have liked ---

MEMBER McDILL: Sure. It's hard to pick them all up.

MR. ELDER: Yes.

MEMBER McDILL: I think for example, on Table 13, it's probably with Peterborough Total Discharge to the sewer it's probably kilograms uranium per year and not kilo uranium per year.

So, there's -- there's a whole pile of stuff like that popping up that I think would really do the document justice to have someone look it over.

MR. ELDER: Agreed. And we -- like I said, we, to be frank, we underestimated that editing stuff. Once we've got a template it's a lot easier.

MEMBER McDILL: Sure.

THE CHAIRMAN: And I think it's the same, breaking up tables of going to two pages, you just don't do that and you don't put the description of a particular chart -- if the chart is on one page and the description of the chart -- the number of the chart is on another page.

It's all kind of those kinds of things around here that's irritating to the reader.

MEMBER McDILL: The last one for me is on Figure 39. I mean, I've said all the tiddly things, but JEB divided by Sue or JEB plus Sue or JEB and Sue, it's a little unclear. I know on one of them Sue wasn't running so it would have to just be JEB but maybe somebody can

change the style that's used there.

Thank you.

That's it for me, Mr. Chair. I think it's a great report, it just needs some editorial brutality.

THE CHAIRMAN: Thank you.

Ms. Velshi.

MEMBER VELSHI: Thank you.

I too very much enjoyed reading the report. I think it's extremely helpful.

So, I have a few suggestions on probably the metrics you may want to include in reporting.

So, one was on -- an I've -- unfortunately my comments are on the April 18th version of the report, so if you have that in front of you, maybe we can look at that.

So, on page 7, where you've got individual dose that it may be helpful to also show a total dose for the facility, good measure of what the total risk is of that facility.

MR. LeCLAIR: You mean a total collective effective dose for the whole facility?

MEMBER VELSHI: That's right. Yes.

MR. LeCLAIR: And would you want collective effective dose as a unit of production to again to try to deal with some of the issues at ---

MEMBER VELSHI: No, just a measure of risk, so if you've got, you know -- I don't know, 50 millisieverts versus 200 millisieverts so you just know how much more riskier to the public this facility is compared to another.

THE CHAIRMAN: This is millisievert per person.

MEMBER VELSHI: Right, this is per person.

The second one is on page 8, and we touched a little about this, it's on spills. So, you don't do any categorization of spills between major or minor, everything is lumped in one bucket.

MR. LeCLAIR: What we'll do -- what we can do in the future report is make sure that when we talk about spills that we -- we do comment on it to address this issue of saying they were all spills that were low volume, you know, within containment, a descriptor that provides something more valuable.

Again, to repeat what Peter was saying is that if it's a significant spill you can be sure there'll be an event report and you'll be getting more reporting than just the annual report.

But, I can see the merit of saying, you know, there were five spills and they were all minor because this is what they mean. And, if there's one major

one then we report on that.

MEMBER VELSHI: Then on page 14, on conventional health and safety, you give the total number of lost time incidents. This is just my counter-argument to the earlier one there. I think what's normally reported is this normalized as a frequency, right, for 2,000 person hours or so. And especially when you go to do some benchmarking it will be helpful to show that.

MR. ELDER: And -- then that's one of the things that we've noted when you put it, you know, from a -- if you're trending an individual facility you can trend by numbers.

So, when you put it together we recognize that we've got to make sure the licensees are reporting those normalized hours. And we will -- most of them have them, it's just making sure they're giving them to us on an annual basis as well.

MEMBER VELSHI: On page 16, when you start performance ratings, I think it would be helpful if your first statement is just that they satisfy all the SCA's. You know, just as an opening remark, it just drives that message nicely.

So, this -- and I don't want to belabour this fully satisfactory rating, but GE-HC, they got fully satisfactory, I mean, ironically it was the only facility

that had an LTI in 2010. So, it just kind of beg the question, you know, why it was but I think we've beaten that one.

MR. ELDER: I will say there was a long discussion at the re-licensing hearing around that particulars from why we maintain the fully satisfactory was to say one of the things we looked at was you're not going to avoid everything, but how do you respond when you do have an event? And they had a trend, but it does beg the question how many, you know, what is -- do you downgrade them because there's one event but the program is still very robust.

MEMBER VELSHI: And I think even if it was just an acknowledgement that yes, even though they had an LTI, they were a very robust program ---

MR. ELDER: Yes. Yeah.

MEMBER VELSHI: --- and the long term trend.

So talking about trends, on page 56 on -- so this is like Blind River Refinery, the effective dose trend.

So clearly it shows it decreasing, but the narrative doesn't provide anything on that, and I think that would be helpful. Do you see the one I'm talking about?

And my last one is on the conclusions, which I thought were great, but it's when you put qualifiers like "no workers were confirmed of receiving a radiation dose" it sort of almost begs the question, you know, why would you put work confirmed? You don't put that for severity of injuries or whatever.

Thank you. That's it for me.

THE CHAIRMAN: Thank you.

Mr. Tolgyesi.

MEMBER TOLGYESI: Merci, monsieur le président.

One, I should say that it's a very good initiative. I don't want to say everything -- repeat everything what was said about how you are nice and handsome, all the team, you know. But you did a good job; it's true.

I think it's an annual report and it will include, as you said, that it will cover also the interim reports because annual reports should cover all that.

Now, before I will comment all this, I just want to talk about this Fish test which you were mentioning. There is two tests, Fish and Dafni. Do you use both?

MR. ELDER: Yes, both tests are actually done.

MEMBER TOLGYESI: Yeah?

MR. ELDER: Yes.

MEMBER TOLGYESI: Okay. And the comment about the satisfactory and fully satisfactory, I think we should be careful because it's not that because a legislator don't want to say that it's fully satisfactory. It opens also, you know, to some comments from those who wants to say that if there was an incident, how come? But you were just saying that it's the best performance, fully satisfactory, and there was a lost time injury. So in front of public also we could be, you know, seen as ---

MR. ELDER: (Off mic)

MEMBER TOLGYESI: Yeah. Now, so as I said, the formula was okay. I think the operations -- what I would like to see because I was questioning, you know, this -- when I was to regulatory limits was the uranium dose. What I find when you look the individual mines, I would like to add there something about the capacity, what they produce, about the grades because when you look at Cigar Lake and McArthur, they are very high grades which means that in the consequence could be some effluents which are higher for -- I suppose. Not necessarily, but I -- yeah, I expect that it could be.

So -- and also, the destination and the origin of ore, like, you know, we were saying that the

Cigar Lake will go to McLean. Okay. And at McLean I will say the ore is coming from Cigar Lake because those who are reading this report, they are not you. You wrote them, but the public who will read, they should not go back. They should not just think about what -- from where it's coming.

On health and safety ---

THE CHAIRMAN: Before you go, I think that's a very good idea, though, to put the benchmark economic parameters like capacity, annual production or maximum limit, the regulatory thing we put on them, anything you can put in in terms of comparison. And I think some of this data is public data. You know, you can actually collect it from our submission.

MR. LECLAIR: I think what will happen in that is we'll look at doing that because I see merit in that. But I think part of the challenge is I think some of these things are almost going to need -- like when you talk, for instance, about grade, you know, and, for instance, if you actually take dose data and you look at the grade of the mine, it's actually seems kind of odd, but you can actually have a high grade mine that has lower doses than the lower grade mine. And the reason why is because the lower grade mine is using conventional mining techniques while the higher grade mine is using very

advanced remote mining techniques.

So there's -- so it's -- what I would suggest is maybe what we need to look at is, you know, pick an annual report and say for this annual report we're going to include a more robust section talking about radiation doses and we'll focus on that. And then the next one, we'll focus on another theme because otherwise, you could imagine, the report could start getting quite cumbersome. But we can certainly pick a theme across uranium mines and mills.

I can certainly see us doing that, saying we're going to add a lot more information on the radiation protection section and we're going to go in more details because then it can almost come like a special ---

THE CHAIRMAN: Yeah, but let's not complicate life here. The numbers that we actually know, they are production limit. I'm talking about the thing we, as a regulator, put on there. That's in the licence.

So you can put that -- you can actually -- the ore concentration that is known, you can put it in there. If somebody wants to jump from ore concentration to a safety issue, that's a whole different discussion.

I don't have to explain a priori, but I think they actually -- comparison of different mines would be useful.

MR. LECLAIR: Right.

THE CHAIRMAN: Anyhow, all of these are suggestions. You don't have -- you can take it and mull it over and we'll see what comes out of it.

MEMBER TOLGYESI: When you were talking about these limits on page 9 of your -- not the presentation, but your submission, is that there is a Key Lake action level. I don't know why the other action levels are not there or there is no action level in other places, so maybe we should -- you know, we should put something which is common for all those mines like on page 11 again. It's Key Lake code of practice, administrative level.

Maybe, you know, we should see what we would like to put in there.

MR. ELDER: And we'll look at this one and, as we've discussed a bit, the Molybdenum is the unusual situation where we had trouble finding that good comparator, but we are working on -- it's a separate project and we're discussing on how you would set limits for those type of situations as well.

MEMBER TOLGYESI: More about health and safety. Each one has individual frequencies, and they use them because I know. I am sitting in a committee which is called Ryan Trophy Committee. And Cigar Lake or

other mines, periodically they win the trophy, and it's based on the performance, on lost time injury frequency.

What I'm saying only that when you want to compare to other sectors, you should be careful because we found that it's difficult to compare any other things. Like in provinces you have like in Quebec, they have lost time and modified work assignment. That's how they calculate.

It's something different in other jurisdictions. So you should be sure that if you -- what you put in you could compare to other sectors or to other provinces or whatever.

When you are talking about decommissioning, I think it will be useful to there. Once again, it will be not so easy if you would like to compare decommissioning guarantees to other sectors or to other mines because they are not necessary. I don't say they are secret, but they are not published like we do them, okay.

THE CHAIRMAN: I think we need to deal with the issue that uranium mines are viewed by a big chunk of the population as the most dangerous mine. And if there is no -- if nobody else has decommissioning numbers publicly available, let some of those activists go and seek them out.

MEMBER TOLGYESI: Oh, yeah. That's why I'm saying, you know, what I said that we have those figures, put them in. Only one if you would like to compare, and -
--

THE CHAIRMAN: That's what I mean.

MEMBER TOLGYESI: That's where it's ---

THE CHAIRMAN: I would like to know with decommissioning of gold mines and a couple of other one, I don't know, like asbestos in Quebec.

--Laughter/Rires

THE CHAIRMAN: I'm being provocative.

Yes, it's quite old. And I don't know what they will do, moving the Thetford Mines.

(LAUGHTER/RIRES)

THE CHAIRMAN: They don't have a regulator for those mines.

MEMBER TOLGYESI: So these were my comments. I had some technical questions but I will not ask them because that's not the purpose of this meeting really.

THE CHAIRMAN: Any other -- you know, one of the -- well, I have two quick questions.

On uranium effluent, is there no limit? I thought there were limits, but they're not showing -- I thought there were provincial limits that are already

well-known.

MR. ELDER: We put on the -- for uranium mines and mills, there is the provincial limit that is there.

THE CHAIRMAN: But it's not shown on your charts.

MR. ELDER: Okay. It should -- it was in the ---

THE CHAIRMAN: Slide 13, for example ---

MR. LeCLAIR: Slide 12 shows it.

MR. ELDER: So what we did was -- Slide 13 is actually trying to show you the trending for a particular facility and if you actually put that limit on it we'd have to be compressing the scale or playing -- you know ---

THE CHAIRMAN: Yes. But again, then you want to ---

MR. ELDER: Yes. I think if we want to do -- yes.

THE CHAIRMAN: Right.

And on Slide 16, I think I had the same question. I thought I heard you say that there's a provincial for selenium. I thought you said it's .6 or --
-

MR. LeCLAIR: Right. So if you -- yes,

it's the same issue here, if you look at Slide 15, we included the .6 milligrams per litre. And then if you look at the scale though, that the bars are almost off -- almost invisible here.

THE CHAIRMAN: I know, but remember that people take things out of context.

MR. LeCLAIR: Right.

THE CHAIRMAN: You want somehow to either say it ---

MR. LeCLAIR: Okay, on the Figure 16, put in the limit again so that it's there.

THE CHAIRMAN: Which brings me to another thing for us to think of, you know, maybe a better way of showing those graphs is as a percentage of limits.

You know, maybe the percentage of DRL, normalizing to, rather than coming up with the absolute and -- you know, absolute variable, and it goes from different contamination, et cetera, rather than actually start to stick to -- there is a limit, and this is a percentage of the limit.

And you can actually say what the limit is in the actual units, but then it's a percent of, which is the operational limits of the various facilities.

I will have to see some of those ---

MR. RAVISHANKAR: Slide -- Slide 22 has got

something similar where we have broken off the graph at the very end, just to show the limit, the regulatory limit.

THE CHAIRMAN: Yes.

MR. RAVISHANKAR: We could do something similar for the graphs that you were mentioning.

MEMBER MCDILL: If I may, Mr. Chair, I'd be dead-set against normalizing them, and it's standard scientific procedure, but it's not comfortable with the public.

THE CHAIRMAN: Is that right? I thought that since ---

MEMBER MCDILL: I think they like to see a line and where you are relative to the line, not ---

THE CHAIRMAN: Well, I thought since we are -- since most of the actual performance is so much lower than the limit, it will play better.

And, again, I'm -- I've got to see it to get a feel, or we may learn to do both. I don't know. I have not idea, I'm just trying to figure out a way -- like, for example, you put in one of the slides -- this is a different slide presentation; but the uranium loading, so what's 500 kilograms mean?

It's not like a big number. You put it into an enormous lake -- you know, if 600 is the

conventional kind of a practice, to say that we are, you know, a fraction of a DRL, or this is a little bit more -- more accepting to me at least.

MEMBER TOLGYESI: It's like 50 cents, Quebec Government wants for students, the rise in the scholarship.

THE CHAIRMAN: That's exactly right.
Right.

MR. ELDER: It is something we'll take under -- we'll look at it, and play with it, but I'm -- we've gone to this way because -- I can remember a number of years ago, it was presenting a lot of things as percentages, and then people came back and said, "Well, what's the real number". You know, "Are you trying to hide something".

THE CHAIRMAN: But you can put the maximum ---

MR. ELDER: And I think you can do it -- as long as you're not seen as hiding the actual data, I think for comparison purposes -- we'll see what makes -- we'll play it -- you know, we'll look at some options and see. And this is something we'll do on an annual basis, so we'll get lots of chances to improve things as we go.

THE CHAIRMAN: Because sometimes I've seen them doing the percentage, and then, on top of the bar,

the actual -- so there's different ways of showing it.

Okay, anybody else?

Well, thank you. We are looking now -- so what is it we're going to get in the fall of 2012? Will it include one report with many, many chapters, including the NRU? Or the NRU will be ---

MR. ELDER: No. So what we plan to do in the fall is we will add one additional chapter, from what you saw here, which is on the processing facilities, the tritium ones, and Nordion.

You will also see -- maybe at the next meeting -- maybe at the same meeting or maybe at a subsequent meeting an actual report on Chalk River and you will also see, actually, a mid-term report on Whiteshell, because it's a decommissioning project and it was really difficult to fold into an annual report.

So you'll see three types of things this fall, but we're trying to, as things come up, roll things together as much as is possible, without the report getting too unwieldy.

And we'll continue to work with the Secretariat to see where we think that bar is, but certainly the first one for Chalk River. I mean, Chalk River tends to -- I don't want Chalk River to dominate the whole discussion with the industry, and so we'll separate

them and then maybe as things get more standardized and everything we'll be able to roll it in.

THE CHAIRMAN: When are we going to see SRBT?

MR. ELDER: SRBT, SSI, Nordion will be in the one that we will present in October.

THE CHAIRMAN: Okay.

MR. ELDER: Okay.

THE CHAIRMAN: Thank you. Thank you very much.

MEMBER TOLGYESI: Something is going wrong; it's just 5:30, and it's the first day, so...

THE CHAIRMAN: Not only that, there's evening reading.

I guess I didn't say that this concludes the meeting for today and the meeting will resume tomorrow at 9 o'clock.

Thank you for your participation.

--- Upon adjourning at 5:31 p.m./

La réunion est ajournée à 17h31