Canadian Nuclear Safety Commission

Commission canadienne de sûreté nucléaire

Public meeting

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Public Hearing Room
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280 Slater Street
Ottawa, Ontario

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

Commission Members present

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

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

Assistant Secretary:

Ms Kelly McGee

Secrétaire-adjointe:

Mme Kelly McGee

General Counsel:

Ms Lisa Thiele

Avocate générale :

Me Lisa Thiele

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--- Upon commencing on Thursday, June 18, 2015
at 9:01 a.m. / L'audience débute le jeudi
18 juin 2015 à 9 h 01

Opening Remarks

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

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

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

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

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

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

I would also like to note that this proceeding is being video webcast live and that archives of these proceedings will be available on the CNSC website for a three-month period after the close of these proceedings.

Please silence your cell phones and other electronic devices.

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

President Binder...?

THE PRESIDENT: Thank you, Kelly.

And good morning and welcome to the continuation of the meeting of the Canadian Nuclear Safety Commission.

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

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

I would like to introduce the Members of the Commission.

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

We have heard from our Assistant Commission Secretary, Ms Kelly McGee. We also have with us

here today Ms Lisa Thiele, Senior General Counsel to the Commission.

MS McGEE: The *Nuclear Safety and Control Act* authorizes the Commission to hold meetings for the conduct of its business.

The agenda was approved yesterday. Please refer to the agenda 15-M18.A for the complete list of items to be presented today.

THE PRESIDENT: So the first item for today is an update on the fuelling error at the McMaster Nuclear Reactor, as outlined under CMDs 15-M25 and 15-M25.A.

I understand that Mr. Heysel from McMaster will be joining us via teleconference.

Mr. Heysel, can you hear us?

MR. HEYSEL: This is Chris Heysel, for the record. Yes, I can hear you.

THE PRESIDENT: Okay. So I will turn the floor to Dr. Newland to make a CNSC presentation.

Please proceed.

CMD 15-M25/15-M25.A

Oral presentation by CNSC staff

DR. NEWLAND: Thank you.

Good morning, Dr. Binder, Members of the Commission. My name is Dave Newland, I am the Acting Director General of the Directorate of Nuclear Cycle and Facilities Regulation.

With me today are Christian Carrier, Director of the Nuclear Laboratories and Research Reactor Division and Pierre Tanguay, Senior Project Officer who is looking after licensing of the McMaster nuclear reactor.

Mr. Carrier will make a brief introduction and Pierre Tanguay will do the presentation. Thank you.

MR. CARRIER: Good morning, Members of the Commission. For the record my name is Christian Carrier and I am the Director of the Nuclear Laboratories and Research Reactor Division.

On November 5, 2014 we brought before the Commission an event initial report about a fuelling error that was made at the McMaster nuclear reactor. The reactor was started up with a fuel assembly left by mistake in a position of the core that did not have forced cooling.

The Commission had requested CNSC staff to provide an update with the results of the root cause analysis once it became available. We are here today to provide this update with the results of the root cause analysis undertaken by McMaster University along with the corrective action plan and follow-up compliance activities

by CNSC staff.

Mr. Tanguay will be doing the presentation today.

MR. TANGUAY: Thank you, Mr. Carrier. Good morning, Mr. Chair, Members of the Commission.

For the record, my name is Pierre Tanguay, Senior Project Officer with the Nuclear Laboratories and Research Reactors Division, and I am in charge of the compliance of McMaster nuclear reactor.

I will start the presentation today with a summary of the event, followed by CNSC staff's response to the event, the results of the root cause analysis, and I will discuss staff's review of the investigation and the corrective action plan. I will conclude with a summary of CNSC staff's assessment of the event and the follow-up compliance activities that are taking place.

I will now summarize the event that happened last October. On October the 8th, 2014 an error was made during a routine fuel shuffle at the McMaster nuclear reactor, or MNR, when the reactor was started up with a fuel assembly left by mistake in a position of the core that does not have forced cooling. The fuel shuffle plan was to exchange positions of two fuel assemblies using a vacant position of the core as a holding site. This vacant position is dedicated for the production of

iodine-125 and does not have forced cooling like fuel positions have.

Once the fuel shuffle was deemed completed, the reactor was started up as per normal procedures and brought up to the normal power of 3 MW at 9:50 a.m., with a fuel assembly in a position without forced cooling.

These diagrams represent a schematic view of the MNR core as viewed from the top of the reactor. The core consists of a lattice of six by nine square positions identified by rows one to nine and columns A to F. Different core components are inserted in each position, consisting mostly of fuel assemblies, control and shut off rods, graphite reflectors identified by the letter "G" and empty water positions identified as "W".

The three positions shown in yellow are iodine-125 irradiation sites which MNR produces as a medical isotope. These three positions are used only when required by the production schedule, at which time iodine production rigs are inserted. These positions are not connected to the primary cooling system and therefore do not have forced cooling.

The objective was to exchange two fuel assemblies from their respective positions, D3 and B7, identified in blue. For this to happen, B7 had to be moved

to a vacant site, or in this case iodine position D7. This first movement is identified as arrow 1 on the bottom of the diagram. Then fuel in position D3 could be moved to B7, shown as arrow 2. And, finally, the plan was to then remove the fuel from the holding position and put it in D3, as shown as arrow 3.

Now, drawing your attention to the diagram to the right, the first fuel movement went as planned, the second movement as well, and then this is where the mistake was made. Instead of latching onto the fuel in the iodine position, the operator latched to an adjacent fuel in E7 and moved it to D3, as shown by the red arrow. This mistake resulted in a fuel assembly left in the iodine position and an empty fuel position adjacent to it.

THE PRESIDENT: Let me interrupt you here. The diagram talks about D4, right?

MR. TANGUAY: D4. Yes, so that appears to be a mistake, so it is really D3. My apologies for that.

THE PRESIDENT: So in there, I'm trying to compare it with the actual CMD. I think I have seen it somewhere else. Is the CMD also -- no, it's right in the CMD.

MR. TANGUAY: Yes, it should be D3. Our mistake.

MEMBER HARVEY: The first representation

that was sent to us it was 3.

MR. TANGUAY: Yes, D3.

MEMBER HARVEY: But they asked us to change it by a second one --

MR. TANGUAY: Yes.

MEMBER HARVEY: -- and in the second one it is there.

MR. TANGUAY: There were a few manipulations done and, yes, so my apologies. We will correct the diagrams before posting it to the web.

DR. NEWLAND: Dave Newland, for the record.

So what we wanted to do was to try and add some clarity with showing a visual movement of the bundles and in doing so we introduced another error. Sorry.

THE PRESIDENT: Maybe we should all focus on the diagram --

MR. TANGUAY: Yes.

THE PRESIDENT: -- in the CMD or in the first -- if you still have the same, the first presentation, it shows the right configuration.

MR. TANGUAY: The right -- yes.

THE PRESIDENT: Okay, go ahead.

MR. TANGUAY: Thank you.

These pictures are to show an operator's

perspective working from the bridge on top of the reactor.

The left picture is what an operator would see looking down at the core from the top of the reactor. It illustrates some of the difficulties working at a height of approximately 10 m above the core. The view on the right is zoomed in so that we can see the details of the core as illustrated in the diagrams from the previous slide.

Once the fuel shuffle completed the reactor was started up to its normal operating power of 3 MW. As part of the normal startup procedures, the reactor operator removed the start-up fission chamber from the reactor core.

During this operation the operator noticed that a fuel assembly was in the iodine position and bubbles were rising from it. The operator called the Manager of Reactor Operations to the bridge and upon observing the situation, the manager requested to shut down the reactor immediately.

The control room operator manually tripped the reactor at 9:55 a.m. or five minutes after reaching operating power. MNR staff then proceeded with correcting the error and removed the fuel from the iodine position. The fuel was removed from service and another fuel assembly was installed in the vacant position of the core.

After the mistake was corrected, MNR staff conducted an internal safety review of the event. Seeing no safety issues of concern, the reactor was restarted. This was, however, in contravention with MNR's operating limits and conditions, or OLC, which requires approval of McMaster's Nuclear Facilities Control Committee, or NFCC, and the CNSC after a safety limit was exceeded. This unauthorized restart constitutes a second event that was to be investigated for root cause.

After operating for the day without incident, the reactor was shut down as per normal schedule. The next day MNR staff realized the contravention with the OLCs and the reactor was kept shut down until a safety case could be developed and until approval to restart could be obtained.

MNR staff conducted a formal safety review of all systems that could possibly be affected by the fuelling event. Visual inspection of the affected fuel and adjacent fuel assemblies did not reveal any abnormalities. Reactor building air monitoring systems and the fission products monitor all showed no sign of abnormal levels of activity.

MNR staff submitted their safety case to NFCC and requested approval for restart. NFCC granted the approval, with a condition that no fuel shuffle be

conducted without formal independent verification of all fuel movements.

McMaster University then submitted the safety case to CNSC and requested approval to restart. CNSC staff found the safety case to be complete, demonstrating that there was no damage to any of the systems. There was no release of fission products to the pool or ambient air or any safety implications with restarting the reactor after the fuelling error was corrected. CNSC staff granted approval to restart MNR, reinforcing the requirement for independent verification for any fuelling operation. MNR staff resumed normal operations on October 14th with no further incident.

I will now discuss CNSC staff's response to this event.

After reviewing the safety implications of the event, CNSC staff gathered additional facts during a visit of MNR on October 28. Two Project Officers and a Human Factors Specialist verified the records, logs and radiological data for the day of the event. CNSC staff also observed operations around the reactor to better understand the event and the work environment.

Staff then presented the Event Initial Report, or EIR, to the Commission on November 5, 2014.

CNSC staff took the opportunity of the

next fuel shuffle on March 9, 2015 to observe interim actions put in place by McMaster University, including a revised fuelling procedure, additional operations staff during fuelling and independent verification steps.

CNSC staff also observed work practices aimed at improving safety, such as pre-job briefing, three-way communications and the use of checklists. CNSC staff were satisfied with the interim measures and general level of safety displayed by operations personnel.

In the following weeks, McMaster University submitted several revised procedures, including a revised OLC document to which was added a clause prohibiting the installation of fuel assemblies in core locations that are not connected to the primary water system. CNSC staff reviewed these documents and responded with comments as required.

I will now discuss the root cause analysis that McMaster University undertook for this event.

McMaster University appointed a team of highly qualified experts with a background in engineering physics, nuclear science and management system. The team was independent of operations, reporting to the Chair of McMaster University's NFCC. The terms of reference requested that the incident be investigated as two separate events, the first one being the fuelling error itself and

the second event being the unauthorized restart of the reactor after the fuelling error was corrected.

The investigation team was requested to assess the safety significance of the two events, determine the root causes and make recommendations for corrective actions. The team completed their investigation in February 2015. The report was submitted to NFCC and it was then submitted to CNSC on March 5, 2015.

The team used the TapRoot© system of investigation which is widely used in the industry and known to return results of good reliability. The team identified a number of contributing factors and adverse conditions for each of the two events. They were then narrowed down to the most significant causal factors.

For the fuelling error three causal factors, or also called direct causes, were identified as follows: Iodine position D7 used as temporary holding site, fuel handler latches fuel at position E7 instead of D7 and misplaced fuel not noticed before starting up.

For the unauthorized restart, one causal factor was identified. Reactor operators and supervision did not explicitly review the OLCs or the license.

From the causal factors identified in the previous slide, the investigation team derived a set of four root causes. For the fuelling error, the root causes

are identified as follows: No requirement for verification, difficult working environment and hazards not assessed. For the unauthorized restart, one root cause was identified: No formal process for knowledge-based decision-making in complex abnormal situations.

Further to these findings, the investigation team made five recommendations. These recommendations include additional quality control and verification of activities important to safety; improve the difficult work environment; prohibit the use of uncooled positions of the core for fuel; an evaluation of the margins of safety for an event like this; and develop decision-making process for abnormal situations.

In addition to the recommendations, the team identified key areas for improvement. These areas for improvement are side issues that may not have caused the event itself, but were significant in the broader perspective and should be included in a corrective action plan.

Six opportunities for improvement were identified which touch on a variety of subjects, including configuration control; qualification of tools and personnel; staff engagement; proper response to abnormal situations, which is to immediately trip the reactor; work practices such as the use of three-way communications; and

improved training.

The investigation team made an assessment of the safety significance of the events. Fuel in an un-cooled position at operating power is covered in MNR Safety Analysis Report by the scenarios of flow blockage. The SAR demonstrates that there is no significant risk to the public.

The investigation concluded that even if fuel had been damaged, there would have been no significant impact on public health due to the small source term and the containment building.

CNSC staff agree that the risk significance from a public perspective is very low. Fuel shuffles at MNR are a common operation that have been performed about once a month since the beginning of operations in 1959.

MNR is a small, low power reactor and the safety systems, including the containment building are designed to contain a release of fission products should there be a fuel failure. There are radiation detectors monitoring the pool water and ambient air -- so there are radiation detectors monitoring the pool water and ambient air within the containment building that would alarm and trip the reactor under abnormal levels. Exhaust ventilation would also shut down and dampers close, keeping

any contamination inside the containment building. The containment building is tested periodically to ensure it meets its intended function.

Note that for this event there was no evidence of fuel damage or radioactive release. CNSC staff examined the radiological data for the pool water and ambient air and there were no elevated levels either on the day of the event, the following days or the days after the restart.

The investigation team assessed the second part of the event, restarting the reactor without approvals from NFCC and CNSC as having no safety consequences. CNSC staff agree that there were no consequences given the administrative nature of the event. However, this non-compliance constitutes a failed administrative barrier which can reduce the margin of safety.

This observation was noted to McMaster University for their attention.

Following the investigation, MNR staff submitted a Corrective Action Plan, or CAP, to CNSC staff on May the 8th, 2015.

The CAP comprises 17 corrective actions addressing the four root causes, five recommendations and six opportunities for improvement.

While each action has its own target

completion date, the entire CAP is scheduled for completion on September 30th, 2015.

In addition to the actions listed in the CAP, MNR staff have installed rig guides in the Iodine positions. The primary function of these rig guides is to facilitate the installation of the iodine production rigs, but they also constitute a physical barrier that eliminates any possibility of inserting fuel assemblies in these positions.

CNSC staff are satisfied that the investigation was done with sufficient independence to avoid any potential bias. The investigation team has extensive scientific and operation background and experience conducting root cause analysis.

The investigation appears to have been done methodically, with an appropriate scope and depth. The report is insightful, well organized and written with due consideration to the important aspects of the event.

The causal factors and root causes flow logically from the sequence of events, although safety culture was not clearly identified as an issue of concern despite several contributing factors that appear to indicate a weakness in this area.

The use of an uncooled position in the reactor core as a holding site is an example of an unsafe

practice that was tolerated until this event happened.

CNSC staff noted, however, that the CAP acknowledges issues of underlying safety culture with three corrective actions targeting this area.

Overall, CNSC staff are satisfied that the CAP addresses the findings of the investigation and that the corrective actions should prevent recurrence of a similar event. Comments on the investigation and the CAP were sent to McMaster University for their attention.

In addition to bringing this event to the attention of the Commission, CNSC staff followed up through several exchanges of correspondence, document reviews, teleconferences and two visits at MNR. Corrective actions are being monitored until completion of the CAP.

An inspection focused on refueling is scheduled for the end of September 2015, when MNR staff performs the next refueling with all corrective actions in place.

Other underlying issues like safety culture and human performance are also the object of focused compliance monitoring.

I will now let Mr. Carrier give the final remarks regarding this event.

Thank you.

MR. CARRIER: So for the record, this is

Christian Carrier.

In concluding this presentation, CNSC staff have reviewed McMaster University's root cause analysis from the perspective of investigation process, independence of the team, expertise, scope, logic and depth.

MNR staff developed a corrective action plan that is well aligned with the findings of the root cause analysis.

CNSC staff communicated their review comments in a letter to MNR and are following up with a planned inspection in September. Enhanced compliance promotion and verification are also being done on safety culture to ensure that best work practices are applied in all areas of importance to safety at the McMaster nuclear reactor.

I would like to emphasize that although this was an unfortunate event, the safety of the public and the workers was never compromised.

The safety significance of this event was low given the small source term and the low power of the McMaster nuclear reactor and the safety of the design.

Overall, we are satisfied with McMaster University's response to this event. We are also confident that the corrective action plan is a positive step that

will contribute to reinforcing the safety of operation at MNR.

DR. NEWLAND: That concludes staff's presentation, and we're available to answer any questions that the Commission members may have. Thank you.

THE PRESIDENT: Thank you.

Before opening up for questions, Mr. Heysel, is there anything you want to add or make comments on?

MR. HEYSEL: Chris Heysel, for the record.

Nothing further. I thought the CNSC presentation was thorough and accurate.

THE PRESIDENT: Okay. So let me -- let's start the question period with Dr. McEwan.

MEMBER McEWAN: Thank you, Mr. President.

Thank you for the presentation, and thank you for the moving diagram. That actually helped a lot in understanding exactly what happened.

So through the CMD and in the slides, you make several references to a difficult working environment. That -- the picture that you showed in the slide really doesn't help that much because all you're doing is really showing the operator's view. You're not showing the surrounding environment.

So what concerns me is that you say that

this use of the Iodine site has been consistently used since the reactor opened. Presumably the working environment has been difficult since 1959. Why now? Why not six months ago, why not six years ago?

And in the absence of actually understanding what that environment looks like, I really can't see how the one led to the other in the absence of an overt failure of a safety culture or an overt failure of lines of responsibility.

MR. TANGUAY: Pierre Tanguay, for the record.

I will try to answer some aspects of your -- your question and comments, and perhaps we could ask Mr. Heysel's perspective on this specific aspect.

So you're right. The picture does not really clearly illustrates -- the difficulty, we're seeing a picture from the top from 10 m above.

The reality is they are working from 10 m above the core with very long tools, manipulating fuel assemblies that are relatively heavy. Visibility has been an issue.

It -- the investigation looked at whether a similar event like this happened in the past, and there was no clear indication that anything similar had happened, which gives us some confidence that the process in place

has worked.

These are highly qualified operators performing the work.

So the -- moving forward, there are quite a number of corrective actions that are designed to improve the working conditions, also addressing the human factor aspect and verification, so always obtaining confirmation that the operator are actually latching on the right fuel element.

And so from that perspective, we are quite confident in looking at the future.

And perhaps Mr. Heysel could answer -- provide his perspective.

THE PRESIDENT: Mr. Heysel?

MR. HEYSEL: Hello. Chris Heysel, for the record.

I agree with Mr. Tanguay's comments. There is 10 m of water that we're working through to identify and latch onto the proper assembly.

I think we've been very successful in this operation given the training and the expertise and experience of our operators.

In this case, I think the operator built a self check, which is the normal process involved here, and which would normally result in a successful operation, so I

think the corrective actions are focused on providing -- providing enhanced verification of these fuel movements and also providing a better working environment for the operator with improved lighting, better improvements on tool handling and some training aspects.

MEMBER McEWAN: So if I look at the two pictures on slide 6, what is surrounding the top of that view?

And you see some numbered metal columns. What are they and what do they do, and how do they relate to the manipulation of the fuel?

MR. TANGUAY: Pierre Tanguay, for the record.

So the picture on the left shows the core, so 10 m down. And the six items that we see that are numbered 1 to 6 are the control rod assemblies.

There is no direct relation with the event. These are components of the core that are -- that are not -- we did not identify in the diagram, but they're there. There are six of them.

MEMBER McEWAN: And are they related to a specific site in the grid that you showed?

MR. TANGUAY: No, they were not identified in the diagram. We -- they should have been.

MR. CARRIER: Maybe a point of explanation

here.

What you see are basically six flow tubes that basically incorporate a drive mechanism for a rod that moves up and down. Five of these rods provide coarse control for radioactivity, so basically they don't have constant movement. The fifth one is basically a single rod that is controlling the fine radioactivity in the core. I don't know which one is which, though, by heart.

But basically, they're essentially very similar in terms of mechanism.

In the picture, we did not specify that -- which sides were controlling or not controlling because they are also -- those rods are going into fuel elements that are basically having a few number of plays, but basically enable insertion of the rod inside.

So we consider them as fuel sites also. That is the reason why they were not specified in the diagram.

The diagram was already complicated.

MEMBER McEWAN: And then on the picture on the right, if I look down, there's one grid which has a sort of an oval on the top left. What is that?

MR. CARRIER: This a neutron source. Basically, it is a source that is-- I've forgotten exactly the element in it, but basically, it is constantly being

activated and produces high gamma photon that basically -- and the surrounding -- the circular part of it is basically beryllium and with this high energy gamma, releases a photon, so basically it's a photo neutron source that basically eases the start-up, basically, of the reactor in the morning by maintaining instrumentation on scale.

THE PRESIDENT: Ms Velshi?

MEMBER VELSHI: Before I get into my question, I just wanted confirmation.

Does the Corrective Action Plan actually include an action to make it physically impossible to put a fuel assembly on a site that's not cooled?

MR. TANGUAY: Pierre Tanguay, for the record.

They actually implemented this corrective action as an immediate action before the Corrective Action Plan was devised, so they did insert physical barriers to -- so that it is impossible to insert fuel assemblies in these three Iodine positions.

MEMBER VELSHI: Thank you.

And my question, there's something we've discussed when we've had the annual reports on facilities like this is the categorization of incidents or near misses and the severity. And I know you talk about safety significance being low.

But just so that I get a better appreciation of what the potential risk was, is this a high, a medium or a low, the potential risk of the two separate incidents here?

MR. TANGUAY: And referring to the two separate incidents, you mean the actual -- the fuel -- the assembly that was left in the wrong position and the second event being the --

MEMBER VELSHI: The unauthorized restart.

MR. TANGUAY: So the restart itself has really no immediate safety consequence. It is an administrative barrier.

They were -- after the fueling error was corrected, they were required, as per their OLC, Operating Limits and Conditions, to obtain approval from their safety committee as well as from ourselves to restart. And they did not, given that they had performed a safety review -- an internal safety review -- they saw no safety -- real safety concern once the fuel was replaced. Therefore, they restarted.

So I would say there is really no real significance in second event.

The first one we considered low significance because the -- it is covered in the safety analysis report. There is really no risk of contamination

to the public, or extremely low given the -- that the reactor would shut down automatically if there was a fuel failure due to fission products release. And then the containment building, which would contain any releases to the air.

There -- however, it could have caused some contamination within the building which would have been annoying and would have caused probably some delays and financial losses and so on.

MEMBER VELSHI: Thank you.

THE PRESIDENT: Monsieur Harvey?

MEMBER HARVEY: Merci, monsieur le president.

Since 1959 and more, you -- the staff has made many assessments of the different safety areas of that facility. And have you ever made any comments or given particular attention of the working environment and the -- what appears today to be a typical working environment?

So was it something that retained your attention in the past?

MR. TANGUAY: So we have looked at aspects of human performance, the performance of the facility, training. There really has been -- there hasn't been much evidence in the past of the difficult working environment as a real problem.

This is also a reactor that is fairly common around the world. There's many of them.

Different -- we've looked at what other reactors do in terms of addressing these -- this difficult working environment, so some of them have, you know, more lighting. Some of them have cameras, underwater cameras. So these are options that I believe McMaster is looking at, and part of their Corrective Action Plan.

So really, the -- so looking to the future, we're going to be looking -- we're going to be looking at aspects of human performance certainly in a more focused manner and ensure that they're doing the right thing.

DR. NEWLAND: Dave Newland, for the record.

Just to add, of course, we expect reactor operators of these kinds of reactors to exchange OPEX with other operators, particularly around challenges, and this would be one challenge where we would expect an exchange of operating experience.

THE PRESIDENT: To McMaster, I heard you say that you improved the lighting.

Are you considering putting underwater cameras which will give you a real clear view?

MR. HEYSEL: Chris Heysel, for the record.

Yes, we've -- we've assessed two types of cameras, radiation hardened varieties, as well as sort of conventional underwater cameras. We're in the process of procuring a conventional camera which we will test and make a determination whether we'll need a radiation hardened variety or stay with the conventional style. But we are pursuing increasing the visibility and improving the working environment with that technical improvement.

THE PRESIDENT: Thank you.

Monsieur Tolgyesi?

MEMBER TOLGYESI: Merci, monsieur le president.

What I understand that you use a fund called holding position was officially not permitted, but tolerated, so have -- how it will change or what it will change if, from now on, we could not use this position? Why don't operators use that because of facility, because of less complex work or speeding or why they were using that?

MR. TANGUAY: Pierre Tanguay, for the record.

The Iodine positions were used, really, for convenience. It is certainly more work and I've mentioned it is fairly physical work to displace these fuel assemblies, so if they don't use the Iodine positions, they

need to move the fuel assemblies to the fuel racks around the pool. And they're underwater, but surrounding the core, and a few metres from the core up to three, four metres.

So it does imply more work, more physical work, and more time. And I believe the Iodine positions were used, as I said, out of convenience given that they were empty and they weren't supposed to leaving any fuel assemblies in there. It was just convenient.

MEMBER TOLGYESI: You're talking about difficult working environment which you were saying that because of the distance. It's 10 m, so it's difficult to see, et cetera.

Now, what you're saying so that there is a change in staffing. You add one person, one fueling, what it will help in difficult working conditions or what will be role of second person in operations?

MR. TANGUAY: Pierre Tanguay, for the record.

They have added one person who's dedicated whose job is to do the verifications, so it is to confirm that they're -- the operator is latching on to the right fuel assembly. It is to also identify -- there's a number on each fuel assembly, so to confirm the identity of each fuel element.

I'm not sure that this is -- addresses your -- yes. In addition to the dedicated verifier, they're going to be using tools such as a jib crane to help the operator lift and displace the fuel assemblies.

They've increased the lighting to help identify that they are on the right fuel elements. And of course, we have talked about the cameras which, in the future, will help ensure that they are latching on to the right assemblies.

MEMBER TOLGYESI: My last one is, is this situation or this part of operation, is this abnormal situation or it is standard, what you do?

MR. TANGUAY: Pierre Tanguay, for the record.

It is a routine operation. They have been doing these shuffles approximately once every month for years, since 1959. So it is a very common activity and quite routine.

MEMBER TOLGYESI: Because what you are saying is to develop a process for decision making in abnormal situations.

What I think, there should be a recommendation that apply process decisions in place right now, like when I am talking about this restarting. There was a process policy that you should apply, you should call

the McMaster University and after CNSC before restart.

So there was a process decision in place, but it was not used.

MR. TANGUAY: Pierre Tanguay, for the record.

They had policy -- in this case, the policy was clearly indicated in their OLC document, so that is the operating limits and conditions, which is quite high in the hierarchy of documents.

However, there was no real process that looks at technical operability. So, for instance, in other larger plants they will have a TOE process, technical operability evaluation, where through a formal process they go through every aspect of relevant to safety and to licensing and administrative aspects to ensure that they are not missing anything.

So even though they had the right policies in place, they did not have a formal process to look at a restart after something, an event, an unusual situation happened.

THE PRESIDENT: Okay. Let's go next, Dr. McEwan?

MEMBER McEWAN: Thank you, Mr. President.

So what I think worries me as much as anything is the fact that the operator didn't activate the

shutdown procedure as soon as he saw the bubbles. I am assuming bubbling from the bottom of the tank is unusual. That I think worries me more than anything, because it implies a lack of appreciation of, if you like, the gestalt of what is happening.

And again, that comes back to what was missing really, as you identified, is comments on the safety culture. That must relate to the safety culture.

MR. TANGUAY: Pierre Tanguay, for the record.

I will provide a few remarks, and perhaps McMaster could answer the question more specifically.

But you are right, the investigation identified this aspect as an area for improvement. In a way that, of course, this was not related to the event specifically, it did not cause the event. However, it was identified as a side issue that needs to be fixed.

And so the corrective action plan appears to address this area. They have three corrective actions discussing safety culture. And this aspect in particular, tripping the reactor, should be the very first reaction when an operator sees something unusual.

But perhaps we could hear it from Mr. Heysel?

MR. HEYSEL: Chris Heysel, for the record.

I agree that scramming the reactor in this situation should have been a reflexive action. We train to trip the reactor first, and investigate later. I think in this situation the operator should have scrammed the reactor, and we focused corrective actions to address that.

I think here the operator saw some bubbles rising from a reactor position, the nature and frequency of those bubbles may not have, you know, been alarming to him or may not have caused an alarming reaction with him. The manager of the reactor was right by the reactor at the time and was asked to come up and look at the situation.

The manager then immediately directed the reactor to be scrammed.

So while we expect and we train on scramming the reactor and tripping the reactor on the identification of anything unusual, we do need to improve the method for training in this area, and we are committed to doing that.

DR. NEWLAND: Dave Newland, for the record.

Dr. McEwan, I agree. We will be giving greater regulatory focus to safety culture at the McMaster University.

THE PRESIDENT: I hope, again, this is one reoccurring, if you like, observation on practically all

facilities. We have got to make sure that the operators, at the moment, feel that they have the authority to shutdown.

It is such a dramatic event, maybe not at McMaster necessarily, but in MPP is the same thing, that you cannot second guess whether you are right or wrong. If you have anything unusual, you shut it down.

This is easy to say, really hard to do. And you remember what happened in Fukushima, that was one of the biggest observations in my opinion, but the authority to shutdown.

So I am not sure all operators really believe that they have the authority to shutdown. Just a comment.

Ms Velshi?

MEMBER VELSHI: I will ask Staff to comment, and then maybe McMaster can. You said in the facility's history such an incident has never happened before.

How confident are you that it hasn't happened? I mean, something like this can happen and not get reported. So I just wondered what kind of checks and balances you believe are in place to prevent something from not getting reported?

--- Pause

DR. NEWLAND: Dave Newland, for the record.

Clearly, the licensee has the responsibility for safety, and we are there just to verify. And we certainly expect a licensee to report on a regular basis, annually, on all of the events and, in particular, when there are unusual circumstances.

We have no reason to believe that McMaster University did not do that throughout its operating life. Thank you.

THE PRESIDENT: I like to characterize such possibilities as my known unknown. You know that not everything gets reported to us.

MEMBER VELSHI: Right. So, I would like to hear McMaster's thoughts on it and how do they make sure that things like these do get reported?

MR. HEYSEL: Chris Heysel, for the record.

Let me just say, for the record, that this incident has never occurred at the university before, and certainly if it had it would have been reported.

I think this case is a good example of our commitment to providing information to the CNSC in a timely manner. I think I had reported to you that within an hour, an hour and a half of its occurrence, if anything we have been accused in the past of over-reporting events. We try

to share as much information with the CNSC, all areas.

So we have processes in place which clearly identify when an event or a circumstance needs to be reported. People are trained on that. So I think we have systems in place to ensure timely and comprehensive reporting.

MEMBER VELSHI: As you implement some of your corrective actions around safety culture, I think some of these safety culture surveys are also a good tool where people, you know, put their hands up and identify unsafe practices that are tolerated or events that don't get reported.

So are you planning on doing any kind of surveys?

MR. HEYSEL: Chris Heysel, for the record.

I think this report or this event has identified some specific areas for safety culture improvement. And we are really quite focused on getting these ones completed as soon as possible.

Going forward, we are going to work with the CNSC Staff for, you know, continuous improvement in this area, and surveys may be one of the options we are looking at.

THE PRESIDENT: Monsieur Harvey?

MEMBER HARVEY: Merci, Monsieur le

Président.

My question is for Mr. Heysel. The target completion date is September 30 of this year. Are you going to meet that target?

And is it to say that at that time, all the personnel will have been informed of the new rules and the new conditions, and that they would have had the appropriate training?

MR. HEYSEL: Chris Heysel, for the record.

The schedule for the corrective action plan is very aggressive. We are working hard, we are staying on schedule. To date, some of the corrective actions going forward are a bit broader and could be larger than we have anticipated.

However, we continue to work hard and keep the CNSC Staff up-to-date on schedule completion and progress.

As far as the training one goes, most of that training has been done or has been developed and we are on schedule for implementing it.

THE PRESIDENT: Monsieur Tolgyesi?

Dr. McEwan?

MEMBER McEWAN: Just one final question.

So the report and the slides say that there was about a five-minute gap between the bubbling and

the shutdown.

What would have happened if say the supervisor hadn't been right next door and it had taken half an hour? How long before something significant would have happened that may have created larger issues?

THE PRESIDENT: While you are answering that one, you can extend it. This is my doomsday scenario. If there is no intervention by anybody, what would happen?

MR. TANGUAY: Pierre Tanguay, for the record.

The safety analysis report for McMaster discusses scenarios of a flow blockage, which is very similar to what we have on hand here. And the safety analysis report demonstrates that there could be fuel failure.

And if there was in fact -- so if the reactor were to operate without -- and with a fuel element without cooling like this, the element could possibly fail and release some fission products to the pool and eventually to the air within the containment building.

Now, there is monitoring systems that are in place and the reactor would trip automatically once these levels are detected. And at this point there is a sequence of events that would happen where the ventilation would shutdown, dampers would close, keeping the

contamination inside the confinement.

So the reactor would trip if left unattended on the fission products.

This being said, there is a corrective action that McMaster has committed to implement, is to perform analytical calculations to actually find out more about what is the margin of safety. And so we will be monitoring these results.

DR. NEWLAND: Dave Newland, for the record.

Just to respond more directly to Dr. Binder's question about the doomsday scenario.

I think Mr. Tanguay just described it. And the doses outside of the building are well well well below the public limit of 1 mSv, and it would be then more a question of the cleanup in the reactor itself. Thank you.

THE PRESIDENT: And the dose presumably in the container, the dose itself to the workers, right?

DR. NEWLAND: Yes. But even those would be relatively small.

THE PRESIDENT: So to do the analysis, I guess the next time you report to us on this will be in the annual report?

DR. NEWLAND: Dave Newland for the record.

Yes, indeed.

THE PRESIDENT: Okay. Thank you.

Ms Velshi?

Monsieur Harvey?

Monsieur Tolgyesi?

Just a couple of quick questions. What is TapRooT? Is that a software? You know, I was struck by the idea they have a list of things, they pick one... What is this, and are you familiar with it, Staff?

MR. TANGUAY: Pierre Tanguay, for the record.

Yes, it is a methodology for root cause analysis. It is a commercial system and it is computer-based. So it is a fairly organized system that takes an investigator through a series of questions identifying areas of problems. And through asking more questions, more focused questions, it eventually leads to the root causes.

THE PRESIDENT: Can anybody use it or just is it tailored to McMaster or to research reactors?

MR. TANGUAY: Pierre Tanguay, for the record.

It is a commercial system that is available to anyone. It can be used in any industry basically.

THE PRESIDENT: Do you ever use it? I mean, does CNSC Staff ever look at at it?

DR. NEWLAND: Dave Newland for the record.

From time to time we have used it, but not typically, no.

THE PRESIDENT: Okay. Do you want to add something?

MR. JAMMAL: Ramzi Jammal, for the record.

Yes. We have investigators who did take the course and I myself in the old days at the CNSC or AECB did take the TapRooT course with respect to investigation and root cause analysis. So we do have staff that do take the course, and I myself have approved multiple staff in order to take that commercial system.

THE PRESIDENT: Old days, or are we talking about now?

MR. JAMMAL: Now, the young generation is being sent for training. And as recently as three individuals a few weeks back went on to a course.

THE PRESIDENT: Thank you.

On this event and this incident, I am curious to know what was posted on McMaster. I didn't get a chance to take a look at the website.

Was the CAP posted? How much information was shared with the community?

MR. TANGUAY: Pierre Tanguay, for the record.

I will comment, and maybe we can ask Mr. Heysel to respond.

But McMaster University has a public information and a disclosure program and protocol in place. I believe within 24 hours of the event they had the event posted on their website and they activated their public information process, we also did pretty much at the same time.

Perhaps Mr. Heysel can...

THE PRESIDENT: Did the CAP get posted, Mr. Heysel? Over to you.

MR. HEYSEL: Chris Heysel, for the record.

We have not posted the Corrective Action Plan.

THE PRESIDENT: So people are aware that you are undertaking some review of operations?

MR. HEYSEL: I will check, but I believe that was included in our initial disclosure, that we were undertaking a root cause investigation with corrective actions to follow.

THE PRESIDENT: So nobody phoned you up and said, I want to see the report?

MR. HEYSEL: Not to date. We did, as part

of our public disclosure, we not only posted it on our website, but we also sent it to local media outlets.

THE PRESIDENT: Okay. Thank you.

My last question is I am interested to know, on the Iodine-125, I mean I visited your lab and I saw... I am trying to understand how intense is the demand for this and the industrial application that drives the frequency of shuffling the various operation over there? And will that be impacted by your new procedures?

Mr. Heysel?

MR. HEYSEL: Chris Heysel for the record.

The demand for I-125 is, you know, stable in developed countries, it is growing in developing nations. We are a major producer of I-125, so we get lots of inquiries about procuring the valuable medical isotope.

As far as the enhancements we are making around the facility and the physical constraints we have put in those positions to prevent adding fuel assemblies there, it won't impact on our ability to supply the customers with this medical isotope.

THE PRESIDENT: So you don't see the new procedure putting pressure on the processing and delivering of such material?

MR. HEYSEL: Chris Heysel, for the record.

For the university, you know, safety is

first, production is second, we speak that to our workers everyday. The nature of I-125 and its long half-life relieves a lot of pressure from any production perspective.

So it is an isotope you can make and you can shutdown for extended periods of time and still meet customer's demands.

THE PRESIDENT: Okay. Thank you.

Anybody else has a final question?

Okay, thank you. Thank you very much.

The next item on the agenda is the Regulatory Framework Program 2014/2015 annual report as outlined in CMD 15-M24 and M24.A. And I understand that Mr. Torrie will make the presentation.

I will give you a minute to set up here.

CMD 15-M24/15-M24.A

Oral presentation by CNSC staff

MR. TORRIE: Okay. Good morning. Thank you, Mr. President and Members of the Commission. My name is Brian Torrie, the Director General of the Regulatory Policy Directorate.

With me today are Ms Lynn Forrest, Director of the Regulatory Policy Analysis Division and Mr. Colin Moses, Director of the Regulatory Framework Division.

We are pleased to be here today to present the annual report on the CNSC's Regulatory Framework Program. Although we are regularly before you at meetings to discuss specific regulatory documents, this report provides us with an opportunity to highlight the important work we are doing to engage in broader regulatory initiatives in the federal government and to discuss our forward plans which help ensure that CNSC continues to have a modern, robust and comprehensive regulatory framework.

Our report will provide an overview of the Regulatory Framework Program, its objectives and initiatives, an overview of our activities this past year, starting with a description of CNSC's involvement in the Government of Canada's broad regulatory form initiatives. We will then describe some of the Regulatory Framework Program key achievements and some of the improvements that we have put in place over the past year, including the soon to be introduced RIAS-like statement to enhance communication of our regulatory objectives, impacts and purpose during public consultation of our REGDOCs.

We will conclude with a summary of our accomplishments this past year and give a preview of some of the work we will be doing over the next year.

In terms of the program overview, at the highest level the objectives of the CNSC's Regulatory

Framework Program can be summarized as follows:

Number one is delivering on commitments in the Government of Canada regulatory reform agenda.

Two, developing clear documented and accessible regulatory expectations in support of the CNSC's licensing and compliance activities.

Three, effective and timely communication with stakeholders and;

Number four, continuous improvement of the program.

All these actions ensure that the CNSC continues to meet its objectives and obligations as a federal regulator and strives to be the best nuclear regulator in the world.

The Regulatory Program Directorate is responsible for management of the Regulatory Framework Program, however we rely heavily on internal and external partners to accomplish these objectives. The Regulatory Framework Steering Committee made up of Directors General from across the CNSC is responsible for program oversight and direction. This approach helps us ensure our publications present a consistent whole of CNSC's perspective.

In addition, our group regularly reports to CNSC's Executive Committee and Management Committee. As

well, we leverage the extensive set of nuclear standards produced by the CSA group which provides and supports -- or, rather, supports and provides details on how to meet our regulatory requirements. Finally, we could not meet our objectives of clear requirements without the input of stakeholders, whether through formal public consultations, workshops or other engagement activities.

Over the past year the viable input we received from a broad range of stakeholders, including all groups of licensees, environmental nongovernmental organizations, international experts and the Canadian public have helped ensure our expectations are well understood, pragmatic and comprehensive.

As you know, the CNSC's regulatory framework is governed by the *Nuclear Safety and Control Act*, which gives us the statutory authority to establish a regulatory framework. The *NSCA* is supported by legally binding requirements established in regulations. The CNSC's *Regulations* set out high-level expectations. More detailed requirements are included in licenses and certificates which in turn may reference other regulatory documents or standards.

In regulatory documents, the CNSC also provides guidance on how licensees may meet regulatory expectations. Although not legally binding, there is a

clear expectation that licensees consider CNSC's guidance in developing their programs. When alternate ways to meet requirements are proposed, licensees must demonstrate how the proposal is equivalent to guidance provided by the CNSC in meeting the regulatory expectations.

In terms of how we develop a regulatory document or the process towards developing a regulatory document, there are consistent -- it is consistent with the expectations of the Federal Government's Cabinet Directive on regulatory management. The CNSC has implemented a lifecycle approach to managing the regulatory framework, including the development of regulations and REGDOCs.

The regulatory document development process has five key steps which are described on this slide and are summarized as follows.

The first step is to analyze the issue. A regulatory issue which the CNSC has decided to address through the development or amendment of a regulation or regulatory document is first analyzed to determine the appropriate scope and purpose of the project. The analysis includes a review of existing regulations, regulatory documents and standards, as well as analysis of the appropriate regulatory actions needed to address the issue.

In some cases, discussion papers are used for public consultation during the analysis stage in order

to obtain early public input. Increasingly we are using discussion papers in this manner.

This early upfront analysis results in a clear understanding of the regulatory issue or issues at play and their impact, along with the options available to the CNSC to address them. Options could include development of new regulations or revision of an existing regulatory document or the introduction of new regulatory documents. Other regulatory approaches include the use of standards, amending licences or licence conditions handbooks and increasing compliance activities.

The next step is to develop a draft document for public consultation. Once a decision has been made to proceed with a new or revised regulatory document, the CNSC develops requirements and guidance for the subject in question. This information may be included as a proposed revision to an existing document or as part of the introduction of a new regulatory document. This stage also includes a detailed internal review and approval processes, as well as the final editing, formatting and translation of the draft documents.

The next step is to consult with stakeholders. The consultation process for draft documents has two key steps.

First, consultation. The draft document

is posted on our website. The public licensees and interested organizations are invited to comment within a defined period.

The next part of that is an invitation to provide feedback on the comments received. All the comments received during the first consultation period are posted on the website. All stakeholders have an opportunity to view these comments and provide additional feedback. As well, increasingly we use workshops or meetings to provide more in-depth discussion on the key issues.

The next step following that consultation is to revise a draft document for approval and publication. The CNSC reviews all comments received during the public consultation stage and determines if any changes are necessary to the document. All the comments are collected in a consultation report, which includes the CNSC's response to each comment. The draft documents are then revised as necessary and prepared for final publication.

If the proposed document includes new requirements that the CNSC intends to impose on licensees, the document is presented to the Commission during a public meeting for its review and approval.

The final step is to publish the regulatory document. All final documents are released

through the CNSC's website for use by stakeholders and licensees and implementation begins.

Next, the regulatory program activities for fiscal year 2014-15 are consistent with our program objectives over the last several years and continue to focus on several areas of effort, including working with our federal regulatory partners to implement government regulatory reform initiatives and continuing to deliver on the commitments as outlined in the CNSC's Regulatory Framework Plan with a particular focus on a general informal review of the *Act* and CNSC's *Regulations*; implementing the CNSC's regulatory framework document or framework with the publication of a number of discussion papers and REGDOCs and ensuring that our stakeholders are engaged at each stage of the life cycle either through workshops, meetings, public consultation or the use of CNSC's website.

I will now turn the presentation over to Ms Forrest to provide further information on CNSC's regulatory form activities, including CNSC's forward regulatory plan, and then we will discuss recent consultation activities through the use of discussion papers to seek early stakeholder input on some of the important regulatory amendments and policy direction.

MS FORREST: Thank you, Brian.

So the regulatory reform has been a key Government of Canada initiative over the last several years and CNSC has been and continues to be really actively involved. Released in October 2012, the Red Tape Reduction Action Plan committed to reducing regulatory burden on Canadians and businesses, making it easier to do business with regulators and improving service and predictability in the federal regulatory system.

Specifically, the action plan is aimed at reducing burden on business through a one-for-one rule and by applying a small business lens when developing regulations. In fact, the one-for-one rule has now been put into legislation and enacted into law; making it easier for businesses to do business with regulators by introducing interpretation policies and, improves service performance and overall predictability of the regulatory environment through new service standards and forward regulatory plans.

In 2014, the federal government published its second Scorecard Report called the 2013-14 Scorecard Report: Implementing the Red Tape Reduction Action Plan, which assesses federal regulators on their implementation of action plan initiatives. Overall, the report confirmed that the CNSC continues to meet its requirements under the Action Plan.

In 2013, the CNSC began posting service standards for high-volume regulatory authorizations. These high-volume authorizations are transactions such as requests for licenses or for certification that number more than 100 per year. The service standards state how quickly an applicant can reasonably expect the CNSC to process their request under normal circumstances.

Then in 2014 the CNSC met its commitment to publish both its service standards and its annual performance against those service standards and in 2015 completed the publication of all its high-volume regulatory authorizations. In 2014 again, the CNSC continued to implement the action plan by posting its Interpretation Policy as required. The policy describes how the CNSC assists stakeholders to understand the regulatory requirements. The CNSC remains committed to providing clear and up-to-date information to help stakeholders understand the regulatory obligations.

New for 2014, all federal regulators were required to conduct a baseline count of federal requirements -- or of administrative requirements in regulations and related forms that impose administrative requirements on businesses. This was an interesting endeavour. Departments and agencies were required to post their Administrative Burden Baseline, which is the name the

government gave to the administrative requirements that are laid out by the feds, in 2014 and we will be required to update the count annually.

The CNSC met this commitment with the posting of an Administrative Burden Baseline count of 8169. A significant portion of this count was derived from the forms that the CNSC makes available to help applicants meet information requirements set out in regulations, particularly to help them fill out licence applications or report on compliance. These requirements on licensees and licence applications, of course, ensure the health, safety and security of Canadians and the environment.

In addition to the Red Tape initiatives, the CNSC also engaged with the Regulatory Cooperation Council, an initiative between the U.S. and Canada with a goal to further enhance areas of -- sorry -- to further enhance areas of cooperation between regulatory bodies. The CNSC already works closely with regulatory bodies in the U.S. in areas of transportation, certification and CNSC staff is now exploring additional areas -- potential areas for cooperation with our U.S. counterparts to support the initiative.

Continuing with regulatory reform, another element has been continued collaborative engagement between federal regulators. In 2014-15, CNSC continue to

collaborate with the Major Project Management Office and the Northern Project Management Office on overarching project management and accountability for major resource projects in the federal regulatory review process.

A key initiative this year was CNSC staff outreach in the North, in collaboration with the Northern Project Management Office by delivering information sessions, CNSC 101 information sessions; in fact, on the role of the Canadian nuclear regulator to potential communities affected by the proposed by the Kiggavik mining project. Moving forward, the CNSC will continue to support the project management offices.

Now, we move closer to home into the area of the CNSC's *Regulations*. An important element of our Regulatory Framework Program includes the regular review and development of the *Regulations*. Like all regulatory documents, the *Regulations* under the NSCA are scheduled for these regular reviews and at the conclusion of each review CNSC staff determine whether amendments to *Regs* are needed at that time or whether the current set of requirements are effective in insuring the continued safety of regulated facilities and activities.

Over the course of the past year, staff managed a number of these regulatory review projects.

The first was the publication of the

amendments to the *Nuclear Security Regulations* and the *Nuclear Substances and Radiation Devices Regulations* to address outstanding issues raised by the Standing Joint Committee on the Scrutiny of Regulations who are charged by Parliament to identify opportunities to clarify regulations. These were just minor. They are called miscellaneous amendments.

In addition, CNSC staff progressed on their work to amend the *Packaging and Transport of Nuclear Substances Regulations* to introduce ambulatory reference to the latest edition of the *IAEA Regulations* and to address operational issues that have arisen since the *Packaging and Transport of Nuclear Substances Regulations* came into force. The *Regulations* were presented to the Commission in March and were approved by Treasury Board in June and will be published in July.

Consistent with our efforts to continue modernizing our regulations, based on lessons learned from Fukushima, CNSC staff are also proposing amendments to the *Radiation Protection Regulations, the Class I Facilities Regulations*, and the *Uranium Mines and Mills Regulations* all together to enhance the safety of nuclear facilities and the protection of workers as recommended by the Fukushima Task Force. This review is nearing completion and CNSC staff is working with the Department of Justice to

revise the regulations in advance of stakeholder consultation later in 2015.

Brian spoke earlier about discussion papers. Stakeholder feedback is key to the success of the CNSC's Regulatory Framework Program and discussion papers play an important role in the selection and development of CNSC's requirements and guidance, they are used to solicit early public feedback on CNSC proposed policies or approaches and they underline the CNSC's commitment to a transparent consultation process. So during 2014-15, we published three discussion papers for public consultation.

First, the one on design extension conditions, quite a technical document which summarizes the CNSC's views on design extension conditions, with the intent of establishing a dialogue with stakeholders in arriving at a common understanding of the associated terminology and application of the concepts of DECs based largely on CNSC's REGDOC 2.5.2, *Design of Reactor Facilities: Nuclear Power Plants* which was published in May 2014. This particular paper was not aimed at an ultimate regulatory document by any means. It was unique in that it was designed to commence a dialogue and it did that.

The next one, regulatory modernization, invited stakeholder input on the effectiveness of CNSC's

regulations as a whole. Consultation closed on May 29 and the feedback that we have received will prove valuable as we analyze all of the regulations together with a view to what they might look like in 2025 and beyond.

Finally, there was a discussion paper on the proposed amendments to the *Nuclear Non-proliferation Import and Export Control Regulations*. The proposed amendments address some technical and administrative issues relating to the *Regulations* and reflect changes to the Nuclear Suppliers Group lists, thereby ensuring continued effective regulation of the nuclear exporting and importing industry.

The control list is established by participating governments of the Nuclear Suppliers Group, including Canada. The control lists are published in the International Atomic Agency Information Circulars and incorporated into domestic nuclear non-proliferation policy and Regulations in the NSG countries. In Canada these control lists are incorporated into the Canadian Nuclear Safety Commission's *Nuclear Non-proliferation Import/Export Control Regulations* and also into the Export Control List administered by the Department of Foreign Affairs, Trade and Development. You can see that consultation on that will close in July 2015.

I will now turn the presentation to Colin

Moses to describe our work on the CNSC's own regulatory framework.

MR. MOSES: Thank you, Ms Forrest.

As you will recall, with the launch of the CNSC's efforts to modernize and clarify our regulatory requirements in 2008, we developed an extensive plan to review all existing regulatory documents and to document our expectations in a number of different areas. This work, while useful in prioritizing our efforts, had us on track to develop a regulatory document library of over 150 documents. Recognizing the risks of duplication, overlap and stakeholder confusion with this approach, CNSC staff developed a more coherent structure to the CNSC's library of regulatory documents and presented that to the Commission in 2013.

All regulatory documents published by the CNSC are now aligned with the document framework shown here. The documents are organized into three broad categories, the first outlining expectations specific to different regulated facilities and activities, generally in the form of guidance on applying for a licence. The second, providing requirements and guidance in specific technical areas according to the Safety and Control Area Framework, and the third covering all remaining areas that warrant clarity throughout our regulatory framework.

In the past year, CNSC staff have been making progress on implementing this vision. As you can see on this slide, with details provided in our Regulatory Framework Plan, we are working towards completing initial versions of the full suite of REGDOCs by 2018. To date, a total of 16 REGDOCs have been published since the new CNSC regulatory framework structure was adopted in 2013. Another nine will be completed this fiscal year, as well as three updates to other existing REGDOCs.

One of the key initiatives over the past few years was CNSC's commitment to update several REGDOCs in the CNSC's regulatory framework to reflect lessons learned from the Fukushima nuclear event of March 2011 and addressing findings from the CNSC's Fukushima Task Force Report. In total, seven REGDOCs have been completed or revised to support this commitment.

At the same time, CNSC staff have reviewed its regulations to identify opportunities for improvement. I will outline some of this work on the following slides.

Firstly, leveraging experience gained in developing REGDOC 2.3.2, *Severe Accident Management Programs for Nuclear Reactors*, developed as part of the CNSC's Fukushima Omnibus Regulatory Document project in 2013, the CNSC published REGDOC 2.3.2, *Accident Management*, which lays out our expectations for accident management

measures for nuclear reactors.

This REGDOC was published in October 2014. Further to feedback from licensees received during the Commission Meeting, and subsequent Commission direction, CNSC staff have been in discussions with affected licensees to discuss and clarify expectations for the implementation of this document.

REGDOC 2.4.1 *Deterministic Safety Analysis*, sets out requirements and guidance for the preparation and presentation of a safety analysis that demonstrates the safety of a nuclear facility. This document updated RD and GD-310 to ensure consideration is given to some of the issues faced during Fukushima, including consideration of site-wide issues and cliff edge or facts, as well as confirmation of the availability of water and power during significant low-frequency events.

REGDOC 2.4.2, *Probabilistic Safety Assessment For Nuclear Power Plants*, sets out the requirements for a PSA updated -- this document updated S-294 to introduce expectations for consideration of spent fuel pools, multiunit effects, and to clarify PSA objectives. Both REGDOC 2.4.1 and REGDOC 2.4.2 were managed as part of the regulatory Fukushima Omnibus Regulatory Document Project.

Continuing with the Fukushima and

addressing lessons learned, REGDOC 2.5.2, *Design of Reactor Facilities*: *Nuclear Power Plants*, was published in May 2014 setting requirements and guidance for new license applications, for new designs of water-cooled nuclear power plants. In addition to introducing new regulatory guidance related to the regulatory requirements, this document introduced changes related to lessons from Fukushima, as well as the results of CNSC staff's benchmarking of other nuclear regulators' design requirements.

Finally, in October 2014, the CNSC published REGDOC 2.10.1, *Nuclear Emergency Preparedness and Response*, setting out the emergency preparedness requirements and guidance related to the development of emergency measures for licensees and licence applicants of Class I nuclear facilities and uranium mines and mills.

In addition to the Fukushima-related work, the CNSC continued to modernize its framework in a number of other areas. In August 2014, REGDOC 2.2.2 *Personnel Training* was published. This document sets out requirements and guidance for the analysis, design, development, implementation, evaluation, documentation and management of training at nuclear facilities within Canada.

REGDOC 2.2.3, *Personnel Certification: Radiation Safety Officers*, was published in July 2014 and sets out guidance to assist applicants in completing an

application for certification as a radiation safety officer pursuant to the *Class II Nuclear Facilities and Prescribed Equipment Regulations*.

Finally, in May 2014, REGDOC 3.1.1, *Reporting Requirements for Nuclear Power Plants*, was published and sets out the timing and information that nuclear power plant licensees are required to report to the CNSC. REGDOC 3.1.1 supersedes S-99, *Reporting Requirements for Operating Nuclear Power Plants*, which was published in March 2003.

Our work will continue in fiscal year 2015-16 with CNSC staff working on all sections of the regulatory framework, including tracking potential improvements to the *Nuclear Safety and Control Act*, continuing work to modernize our regulations and continuing to develop REGDOCs.

Our focus on stakeholder engagement continues with up to seven discussion papers and 15 REGDOCs expected to be released for stakeholder input. We will also remain flexible in our consultation approaches, leveraging the input received from stakeholders to build a comprehensive and robust regulatory framework. All our planned activities are outlined in the CNSC's Regulatory Framework Plan, which is published on the CNSC's website and included in your material today. On the following

slides I will highlight some of the over 50 active projects that we have underway this year.

With up to seven discussion papers planned this fiscal year, the CNSC will continue to implement its commitment to our stakeholders for early engagement on our regulatory initiatives. This includes a discussion paper exploring the regulatory framework for waste and decommissioning, discussing options for the ideal framework to oversee the diverse approaches to waste management and decommissioning.

In addition, the CNSC will be seeking input as to the optimal approach to setting expectations for the integration of strategies, policies and practices that consider a broad range of human factors to support excellence in human performance.

Building on the CNSC's policy on cost-benefit, the CNSC will be seeking input on the necessary elements of a robust cost-benefit analysis and clarifying how the CNSC considers this information in assessing proposals from the regulated community.

Looking forward to the future, consistent with our commitment to be ready and responsive to whatever it will bring, the CNSC has been monitoring technological developments and will be publishing a discussion paper seeking input on some of the new and unique policy

considerations associated with the regulation of small modular reactors.

Turning now to regulations, the CNSC will be moving forward with targeted amendments to our regulations to address lessons from Fukushima as discussed earlier in this presentation. In addition, the *Radiation Protection Regulations* are undergoing a broader review in the interest of ensuring continued alignment with the evolving international standards and implementing any improvements that have been identified since the regulations were introduced.

Finally, as was discussed earlier on the slide, CNSC staff will advance with amendments to the *Nuclear Non-proliferation Import and Export Control Regulations*.

Regarding REGDOCs, the CNSC will be clarifying regulatory guidance for nuclear substance and radiation devices licensees. In addition, building on the standard developed by the CSA with the CNSC's support, we will be outlining guidance for the certification of exposure device operators. In the area of human performance management, further to an initial public consultation and subsequent stakeholder meeting, the CNSC will be issuing a revised document on managing worker fatigue for public input ahead of the planned publication

later this year. At the same time, we continue to progress on a broader document addressing all the elements of fitness for duty.

Moving on to operating performance, CNSC staff recently held a constructive stakeholder meeting to help inform the final draft of REGDOC 2.3.1 which outlines regulatory requirements and guidance for the oversight of construction and commissioning activities to ensure the reactor facility is capable of operating safely and reliably over its lifetime. It is expected that the REGDOC will be brought forward to the Commission later this year for consideration.

In addition, following extensive consultations with stakeholders, we are pleased to note that REGDOC 2.3.3, *Periodic Safety Reviews*, was published in April 2015 following the Commission's approval. The document sets out the CNSC's requirements and guidance with regard to a PSR of a nuclear power plant, which is the comprehensive evaluation of the design, condition and operation of nuclear power plants, providing an overall view of plant safety and the quality of safety documentation.

Finally, REGDOC 2.5.2, *Design of Reactor Facilities: Nuclear Power Plants*, is currently being reviewed to determine if additional information is needed

on electrical systems.

Continuing on the topic of design, the CNSC is currently drafting requirements and guidance for the design of fixed radiography installations and will be shortly launching a public consultation. In the safeguards of non-proliferation series, REGDOC 2.13.2 provides guidance for licensees who intend to import and export nuclear-related dual use items which are also known as controlled nuclear substances equipment and information. This document is due to be published this fiscal year.

With a continued focus on the transparency of our regulatory processes, the CNSC recently published REGDOC 3.5.1, *Licensing Process for Class I Nuclear Facilities and Uranium Mines and Mills*, which provides an overview of the licensing process for Class I nuclear facilities in uranium mines and mills. Similarly, updates to the recently published REGDOC 3.5.2, *Compliance and Enforcement: Administrative Monetary Penalties*, ensure our processes for compliance actions are transparent to stakeholders.

To complete this picture, CNSC staff are currently working on REGDOC 3.5.3, Regulatory Fundamentals, which provides information on the CNSC's regulatory approach and its philosophy to achieve its regulatory objectives.

And finally, further to an action from the Commission, the CNSC has advanced on the development of a glossary of CNSC terminology which lifts the terms and definitions used in the *Nuclear Safety and Control Act*, its Regulations made under the Act, as well as CNSC regulatory documents and other CNSC publications.

As an aside, we are not the only ones seized with this, with both the Canadian Standards Association and the IAEA working to update and streamline their glossaries, a critical element to ensuring expectations and guidance are well understood.

Aside from REGDOCs we continue our active participation in other standards development activities. In particular, consensus standards produced by the CSA are an important component of the CNSC's regulatory framework plan. In fiscal year 2014-15, the CNSC and CSA, continued their efforts to ensure alignment between the CSA Nuclear Standards Program and the CNSC Regulatory Framework Program. CNSC and CSA committees and working groups met regularly to discuss program planning, communication of activities and CSA nuclear program work against the CNSC's regulatory framework plan.

We continue to focus on the transparency of this work. Due to contributions from the CNSC, CSA standards are available to view through the CSA communities

of interest website for all stakeholders. In addition, the CNSC issues notification of draft standards that are issued for public review by the CSA. These are circulated to the CNSC's over 2500 stakeholders through our distribution list.

Over the years, CNSC has made several advancements -- enhancements to our analysis and regulatory issues, including initiating early engagement with stakeholders to help identify concerns or challenges with regulatory requirements, and increasing the use of discussion papers and workshops to receive this feedback.

Recently stakeholders suggested that the CNSC adopt the use of a Regulatory Impact Analysis Statement for REGDOCs, similar to that which is used in federal regulation making. Recognizing the effectiveness of this assessment during regulation making, CNSC staff are developing a similar document for publication with draft REGDOCs when seeking stakeholder feedback. The RIAS-like statement will provide additional information on the regulatory objectives of the creation or amendment of a REGDOC, the approach being taken to meet that objective, an overview of the expected impacts on licensees and applicants and information on the proposed implementation plan.

It is expected that the RIAS-like

statement will provide stakeholders with a better understanding of the document objectives, regulatory approach and expected impacts and encourage stakeholders to provide CNSC staff with feedback, submitting information on potential cost impacts and providing calculations and assumptions used to derive those impacts. The RIAS-like statement will be piloted in this fiscal year.

Finally, as evidenced throughout this presentation, stakeholder engagement is a clear priority. Through the many ways outlined on this slide, we seek to ensure the transparency of our activities, depending on the constructive feedback we receive on our regulatory initiatives to ensure the regulatory requirements that we set are reasonable and effective at achieving the desired regulatory outcome.

I will now turn the presentation back to Mr. Torrie to conclude.

MR. TORRIE: Thank you.

So in summary the past year was a very busy year and the workload is going to continue over the next few years in terms of implementing the regulatory framework. The CNSC remains connected and in line with government regulatory improvement initiatives as well and has implemented a number of improvements with a particular focus on actively seeking opportunities to engage and

consult with all interested parties.

We have continued to modernize the framework through the development of the new regulatory documents and regulatory amendments to ensure the CNSC's framework continues to reflect the latest developments in domestic and international lessons learned and guidance. The CNSC's regulatory framework plan outlines issues, activities and looks forward over the next year to develop and maintain a long-term plan for our regulatory framework. This work plan will remain flexible and adaptable to the latest developments in federal and nuclear regulation.

Finally, I would like to take this opportunity to recognize the hard work of CNSC staff involved who have worked diligently in moving this plan forward. This completes our presentation. If there are any questions we are available to answer them.

Thank you.

THE PRESIDENT: I think this is a good time for us to take a short break and we will come back in about 10 minutes. Thank you.

--- Upon recessing at 10:50 a.m. /
Suspension à 10 h 50
--- Upon resuming at 11:00 a.m. /
Reprise à 11 h 00

THE PRESIDENT: Okay, we are now back and we are getting to the question period, starting with Monsieur Tolgyesi.

MEMBRE TOLGYESI : Merci, Monsieur le Président.

I found that this report gives the kind of good resume and performance review of what was done and what are the orientations taken by CNSC. This is said, according to the Red Tape Reduction Action Plan, this regulatory system aims to reduce administrative burden on businesses. Also in the plan I saw that there is a consultation with stakeholders and the regulatory framework plan will take place in 2016.

However, what we hear from licensees in general, that this is something which is going quite fast and it is lots of regulations to absorb, to implement. So was or is there a feedback survey or consultation with licensees to evaluate specifically the impact or burden of these new regulations published are adding, modifying or simplifying; a kind of progress report, you know?

MR. TORRIE: Brian Torrie, for the record.

There isn't a specific initiative to necessarily assess the impact of all the REGDOCs on licensees. We are in regular communication with them as we

go through each REGDOC and they have expressed that concern about the workload, of not just the implementation, but also the reviewing of all our documents. And it is a concern for us as well.

We heard -- we were recently just the past couple of days with the CSA group and there are concerns about workload as well there and developing standards. So just in terms of that workload of development and working towards implementation, we have developed a number of different strategies to deal with that. One is -- and we have discussed a lot of them today already -- one is to talk more about the impact of the REGDOC earlier on in the process, the RIAS-like statement, and I will ask Lynn or Colin. They can comment further on that.

The other thing is to do the workshops is a much more effective way of getting their feedback. We have a one day workshop where we can do to exchange so it reduces the workload on both sides in terms of commenting and responding to comments that way and I think brings us closer to the kind of document that could be much more implemented -- implemented more easily and that eases the burden on licensees as well. So those are just a couple of examples.

Internally, too, we are looking at where we can gain efficiencies in the process, streamlining

things. Our staff have been at this for a number of years and they are getting good at -- they are getting better at it that way as well. There is also a concern about the knowledge transfer and we saw this again with the CSA group as well where there is a knowledgeable staff who have been around a number of years working on these documents. So we are finding -- looking at ways or strategies to deal with that to bring in the younger generation so that this progress continues. But we have a pretty ambitious timeline to get these REGDOCs done by 2018 and for the time being we are going to keep pushing towards that. But I will ask Colin or Lynn to comment further.

MR. MOSES: Yes. Just to add to what Mr. Torrie mentioned, the RIAS statement we are introducing with REGDOC is looking at getting at that issue, because as you know our big priority is clarity of a regulatory framework. In a lot of cases it's just writing down expectations that are already in place that licensees already comply with, but to have a common and clear understanding of what those expectations are. So in those cases when we develop our RIAS statement we will make it clear that there is no change that we are trying to drive in industry. There should not be any significant impact with those initiatives.

Simply what we are trying to do is capture

the current practice and the current expectations. And in those cases where we are unintentionally driving changes or requiring, you know, adjustments to programs that don't have any significant safety benefit, by stating that regulatory objective clearly, in the feedback we get from our stakeholders we can adjust our approach to accurately account for that. So although it is a very ambitious work program, we expect that largely the impacts are more on the sort of engagement in the process and the consultation on the documents rather than the implementation.

Finally, we are -- industry is undertaking some efforts to look at the impacts of some of the regulatory documents that we have put out, in some areas they have confirmed that those impacts are essentially negligible. For example we talked earlier about the REGDOC 2.2.2 on training systems, which for implementation essentially has no net cost on industry.

But in other areas like REGDOC 2.10.1 for nuclear emergency preparedness and response, we consciously drove change through requiring the pre-distribution of KI pills. That has a cost associated with it. Industry is developing a better understanding of what that cost is and it is incumbent upon us to weigh that cost with the benefit of the expected outcome and decide whether it's appropriate to move forward or not. So we certainly are sensitive to

impacts.

The cumulative effect is something that we haven't necessarily looked at across the entire spectrum, but I'm sure we will hear from our stakeholders on the individual initiatives.

MEMBER TOLGYESI: Yes, you were talking about one-day workshops. I think those workshops are on specific REGDOCs which -- where you are looking specifically on some subjects, but when you are looking at this globally in perspective, it is a quite high load of regulatory documents. I think from the licensee's perspective, one of the Red Tape Reduction Action Plan is predictability. So they don't know what to expect probably because the regulations are coming.

So I think they are looking at that with some kind of, how do you call that -- not presumption, but some kind of worry what will happen and I'm quite sure it puts on them quite a burden.

MR. TORRIE: Yes. I would agree. We are not disagreeing there is a burden there, but I think at the same time CNSC, being pretty flexible on the implementation side of things, so when a REGDOC is approved by the Commission and then goes toward publication, and the discussion of implementation is flexible in terms of identifying where the gaps are and looking forward so that

it's not like if eight REGDOCs are passed in one month or one year that they are all going to be implemented by the end of the year. It depends on how that implementation happens and sort of the discussion that followed on the KI pills is a good example of that, so there is flexibility there to lessen the burden.

THE PRESIDENT: Just for full disclosure, okay, so everybody knows my biases, if I leave this organization in 2018 and that's my legacy, is when I arrived at this organization and I asked, “How many regulatory documents do we have?” nobody knew the answer -- were a set of old and new and many, many characterizations.

So I'm not apologetic for putting clarity in our regulatory scheme. Many of those documents are just codifying existing practices. So no excuse. And I actually chuckle when somebody is saying, oh, too much work here.

The point here is this is nuclear and clarity, remembering in 2008 when I arrived clarity was the issue, differences of opinion between the regulator and the licensee. So we launched this ambitious kind of a program.

I'm looking forward to at least the first five-year review for the 58 -- now I know the number, 58 regulatory documents -- and I am actually very proud if we can actually achieve this clarity between now and 2018. I

take the point that it's, shall we say, ambitious but necessary.

Fukushima happened. We couldn't even know Fukushima. We absolutely had to revamp all our regulatory documents, our emergency planning documents and all those things. So I'm looking forward to seeing this finished.

And I interrupted you, Mr. Tolgyesi.

MEMBER TOLGYESI: Well, you interrupted him.

THE PRESIDENT: Okay.

--- Laughter / Rires

MR. TORRIE: I think I'm used to that.

THE PRESIDENT: So I will move on to Dr. McEwan.

MEMBER McEWAN: Thank you, Mr. President.

I guess this is a two-part question. You have talked a lot today and in the slides and in the CMD about stakeholder engagement and if I look at slide 25 you have a number of specific items, and including meetings and workshops and things. What interests me, and not so much for the NPP's but I think for the -- particularly for the hospitals -- how do you actually identify the stakeholders? Do you just throw something out and expect a passive response or are you actively trying to identify them, communicate with them and ensure that you are getting a

response from them?

MR. TORRIE: Thanks, that's a good question because there is a sort of general distribution out there. We put it on our website, we put it on our, we send out our email list and we hope that people get it and, as we have been talking about, there is a burden, a consultation burden on many of these groups as well to be able to comment. But we are increasingly going out to specific groups.

So for example, and I think Lynn can talk about this in terms of what we have done in the Regulatory Modernization Project, we are identifying those groups and then specifically asking them to participate.

So I will just ask Lynn if she can comment on a couple of the initiatives we have.

MS FORREST: Yes, thanks.

One of the things we're doing is identifying specific organizations to go and talk to. For instance, on regulatory modernization, we made a specific effort to do a presentation at the annual conference of the CRPA, the Canadian Radiation Protection Association.

In addition, of course, we presented at the CNA, but that's the big guys.

And I think you'll see going forward more and more -- we also mention it in our CNSC 101 sessions,

which we give across the country and attract stakeholders from the smaller groups.

We're working with DNSR, in particular, for the Class II and the smaller licensees, to improve our outreach to those groups also through the DNSR newsletter as well just -- but we're very aware of the issue and I think we're turning a corner on that in the next -- in the past six months and in the next year.

MR. MOSES: And Colin Moses, just for the record.

Just to add, too, with respect to your question around hospitals, with nuclear power plants we have clear communications with the CANDU Owners' Group which coordinates the input of all the nuclear power plant licensees, and we provided that information through the CRPA and some other stakeholders and the Class II licensees and some of the DNSR licensees.

And they're looking at opportunities to perform a similar function for their stakeholders to collaborate and, on behalf of all those types of licensees, provide input to the regulator so then it's not thrown out to individual hospitals or individual licensees to comment based on their own input.

It's still early days in those discussions, but that's why we try and leverage some of the

other communication tools that we use that are more targeted to those kind of licensees, like the Directorate of Nuclear Substance Regulation newsletter that they put out on a regular basis.

MEMBER McEWAN: So would you include in that roll-out or that seeking of information, for example, medical associations, medical technology associations to ensure that you're getting the feedback from the users?

Because they would not typically be within the hospital framework, for example, if you were using a broad area to go to.

MR. MOSES: Colin Moses, for the record.

I think that's something we can really look at. We do, you know, on particular regulatory initiatives that have an impact on a very select population of licensees who may look at supplementing our generic communications, but I don't know how much we've leveraged some of the industry associations for those communications.

I think some of the broader ones who are more used to dealing with us are on our distribution list, but I think we can take that back and look at opportunities to improve that input from those stakeholders.

MEMBER McEWAN So I guess the second part of the question, if I look at the way that you have set it up, you have -- 1.4 is Class II facilities and 1.6 is

nuclear substances and radiation devices.

I think we saw yesterday in the presentation from MNI that, particularly in those facilities which are manufacturing radio tracers and radio pharmaceuticals there is an almost indistinguishable continuum between the Class II licence, which is the cyclotron, and the processing of the cyclotron and the radio pharmacy, which is the -- if you like, the dispensing and distribution arm.

And it seems to me that if you take out the specific inanity of what happened at MNI, there are areas there where you can have certainly, I think, confusion in interpretation, confusion in roles and responsibilities by having multiple different licence requirements extending across what is effectively a single operational unit.

How do you address that within this RegDoc framework and how do you look at it going forward?

MR. MOSES: Colin Moses, for the record.

I'm not sure that we address that, really, within the regulatory framework, but what the CNSC has been doing over the past several years is looking at opportunities to consolidate licences, to bring in -- you know, if certain licensees or facilities have multiple licences under different regulations, to bring those

operations under one single licence which facilitates and might mitigate some of those concerns.

With respect to the regulatory framework, one of the things we have done for some of those licensees is consolidate all the regulatory requirements under that one single licence application guide.

So for example, you made reference to REGDOC 1.6.1 for nuclear substances and radiation devices. Well, instead of sort of distributing requirements around radiation protection and training and such throughout the regulatory framework, for that group of licensees we brought it all under the one single licence application guide to lay out our expectations in each of the technical areas that they need to provide information to us in their licence applications.

So we are looking to mitigate that a little bit through that approach or flexible approach to the different areas of our framework.

MEMBER McEWAN: You've still got some work to do to make it functional. And I think that the risk is that you fail in your reduction piece by doing this, so I would urge you to look at perhaps a more aggressive role of harmonization between those -- particularly those areas, as I think they are increasingly going to be seen as a common routine practice through the country.

MR. MOSES: Thank you for that.

One -- not to continue the conversation, but one thing we are doing with REGDOC 1.4.1 is consolidating about six different guides into a single regulatory document, so I think we are looking at those opportunities, and we'll take that feedback going forward.

THE PRESIDENT: I think one of the long-term objectives is that you're not going to look at a particular regulatory document. You look at a particular function, if you like, and if you can Google, you'll get all the relevant documents that go with that particular function, so you don't have to start looking to see what's in one regulatory document that may impact on what's in another one, which is right now it's still paper and document specific, so we're trying to make all those linkages. We're not there yet. You're right.

Ms Velshi.

MEMBER VELSHI: Thank you.

It would be helpful to me if you shed some more light to this regulatory reform and red tape reduction, and particularly around the administrative burden and what that 8,169 really means and how meaningful is that.

MS FORREST: Lynn Forrest, for the record. Thank you for that question.

I particularly like the final part about it, about how meaningful it is.

Basically, the red tape reduction administrative burden baseline was a requirement that is very specific. It comes right from the PMO through the Treasury Board. And it requires us to count every field in every -- in any report or application form that users are required to fill out.

So one of the challenges is that we have made licence application forms to make it easier, particularly for the small licensees, to know exactly what they need to put in a licence application.

So we have one that's specific to each use type in the nuclear substance regulation area.

The roles of counting involve, first of all, counting all of the requirements in the regulations. That's the starting point. So whenever there's a requirement to report on something, requirement to file a report, requirement to provide information, that counts as one.

The rub is when you get into looking at the forms that support the regulations, a field that is -- that requests the name of the organization counts as one. The address counts as another. The telephone number counts as another, and on it goes.

And that is equal to the field that requires you to articulate how you met the regulatory expectations.

So it is what it is. It's a larger government agenda to capture -- capture all of the administrative requirements in government just like -- similar to the paper burden reduction initiative in the nineties.

We haven't been asked to reduce it yet.

However, the 8,169 is a result of us providing great clarity to our licensees on how to file an application.

So what are we doing? First of all, we argue that the word "administrative burden" is not appropriate, but the government has decided to call it that. It's administrative requirements whether it's a burden or not.

And I think that reduces the meaningfulness of the number.

The number is a number that I don't think is very meaningful across government. We've got 8,169 and, for some reason, we're the fifth-largest in all of government.

We're looking at the consistency of the counts across the number of government departments and the

Treasury Board actually didn't monitor that very closely as long as the number was come -- as long as people came up with a number.

We'll be publishing a revised number in the fall, and we're looking at our methodology right now.

So I hope that answers your question.

THE PRESIDENT: So do you have a number for Revenue Canada, I don't know, Customs and Excise?

MS FORREST: Yeah, Lynn Forrest here.

So actually, one thing that you'll be very interested in is that Revenue Canada was carved out of this initiative.

It's -- and it's -- this initiative red tape is highly driven by the Canadian Federation of Independent Business, and most of their complaints are around tax and CRA and the forms for that initiative.

And I can assure you that CRA is working on reduction and consolidation of requirements, but they were carved absolutely in the law out of this initiative.

So do I have an idea of the other departments? Well, I don't for CRA. And actually, I can't recall off the top of my head the top four.

I know that NEB, for instance, only had 1,000 and I'm not -- I haven't really compared why they have 1,000 and we have 8,000, but I think it relates to the

nice forms that we give people, including the annual compliance reporting forms.

To be honest, if we put -- if we put one field in a form that says put your name, address and telephone number in this field, it's probably only going to count as one administrative requirement. Three fields counts as three. So it's kind of interesting.

Having said that, on another note, I have heard the CFIB speak to this issue, and I wouldn't be surprised if, over the next year or two, they try to influence government to implement a reduction initiative around this.

So we'll see what comes, but it's bigger than this.

MEMBER VELSHI: Yes. It's really what comes next, which is of bigger concern and what kind of behaviour does this drive, whether it's consolidation of fields.

I mean, if applying for an operating licence for an NPP is the same administrative burden as, I don't know, getting certification for an operator because it's got the same number of fields, that sort of begs the question, really, what is it that you're trying to do with that.

But thank you for that insight.

THE PRESIDENT: Mr. Harvey?

MEMBER HARVEY: Merci, monsieur le president.

Well, I'm happy to see -- thank you for your presentation. It's quite complete. It's a good presentation.

And I'm happy to see that we had a target in 2012 and '13 and which was the 2017-18. We are always aiming a target, and we are on the track to get to the target despite the -- I've got some concerns with the capacity of the stakeholder to follow the routine and even the Commissions to follow it. You've got to find some places in our meeting to present your REGDOCs.

Anyway, this is -- my first question -- I'm happy, but my first question is, okay, we will have 58 documents instead of, I don't know, 100 or more than that, but will the number of pages be lower than the -- what we've got presently? Are you making some efforts to synthesize the whole thing to be clearer but shorter?

MR. TORRIE: Yeah, I think I'll ask -- I'll ask Colin to speak to specific REGDOCs. I think you've already mentioned a couple that have brought the number -- the consolidation should bring the number of pages down, although sometimes clarity does require more pages.

So I'll pass it over to Colin.

MR. MOSES: Thanks.

Certainly eliminating cover pages saves us a few pages. But no, we -- by bundling the topics together, it lets us look at the issue more holistically and it identifies -- it's much easier to identify areas of duplication.

There's information to provide appropriate contacts that doesn't need to be repeated multiple times.

Other areas, for example, in the area of management systems, well, many of our documents are programmatic documents, and those programs need to be managed under a management system. And so in the past, their tendency had been to explain in detail management system requirements for each of those individual programs.

Well, we've got an initiative working with the Directorate of Safety Management right now to look at how we can more accurately leverage the guidance on management systems without having to repeat it through multiple REGDOCs.

So we're certainly attuned to that.

In some areas, it does mean, you know, if they're very distinct and very separate, having different parts built into a REGDOC, and to avoid confusion of our stakeholders. But in the most cases, what we're finding is

that by doing this consolidation, looking at the issues more holistically, we can present the information in a clearer and more succinct manner.

MEMBER HARVEY: Thank you.

Another question is the -- recognizing the huge efforts given to that reform, once we get to that point with the 58 REGDOCs, what will be the nature of the efforts to maintain and to update those documents?

Are all the documents built in sort of -- in a way that it will be possible to modify those documents without having the same path to follow?

MR. MOSES: Colin Moses, for the record.

We talked earlier about the regulatory impact analysis statement, and while it's a useful communications tool with industry, the key element, in my eyes, that we're introducing with that is a clear articulation of the regulatory objectives.

And by having that sort of outlined exactly what we wanted to accomplish, that gives us a reference point to look at the documents in five years when they come up for review and see whether we have been effective in accomplishing that objective.

And so I think as we get the initial sort of publications out, then we can move our focus more to performance management and to look at the effectiveness of

our regulatory instruments in achieving the desired outcomes.

So I think as we transition through this five-year period, certainly right now our focus is on putting it down on paper, but more and more, we'll turn our focus to ensuring the effectiveness of our regulatory interventions in the RegDocs and regulations.

MEMBER HARVEY: But if you have to modify these documents, is there other ways to follow the same path and to get through the process exactly like you are doing now?

MR. MOSES: Absolutely. I think, you know, in some areas we come across issues, you know, typos, changed issues or different perspectives or feedback from the users of those documents. And in many cases, we decide to move ahead with a -- sort of a quick update or a quick change.

So a good example of that, we published a REGDOC outlining our process for Administrative Monetary Penalties, but in using that document, we identified the need for a clearer explanation of how those -- how the recipients of that can request a review of the Administrative Monetary Penalties.

So right now, we're introduced a form and we're updating some of the content in that REGDOC. Because

it's an information document and we're not substantially changing guidance or requirements, we're putting that through a much more streamlined process.

We still need to ensure the quality of the product, the discipline of our internal reviews, but there's no need to go through the full consultation process to put that information out to our stakeholders.

THE PRESIDENT: Thank you.

Mr. Tolgyesi?

Dr. McEwan.

MEMBER McEWAN: Thank you.

So one final question.

We've heard several times as we've seen the REGDOCs as they come through a criticism from industry of the incorporation in the same document of a requirement and a guidance. And as they've rolled out and they're being used more, are you finding that that hesitation or reluctance to accept it is going or is it remaining and are people still saying they find it very difficult to see the two elements in one document?

MR. TORRIE: Yeah, I wouldn't say that concern is necessarily fading. It actually may vary from one REGDOC to the next. But we are doing specific initiative to kind of address the issue of guidance versus requirements, and Lynn can talk more about that.

MS FORREST: Yeah. Actually, we've -- it is an issue, and interpretation of guidance, you can interpret as very -- very important to follow the guidance unless you have a faint hope clause of finding a different way to do it or you can interpret it very liberally, that it's guidance and you don't really have to look at it as long as you meet the objectives and the requirements.

We have had feedback about the two in the same document, but I don't think we're going to -- I think we're pretty clear as to what requirements and guidance are.

But to speak to Brian's point, we did recognize that in the last six months, actually, and we have a project now going on, and it's a really interesting project where the licensing folks and some of the compliance people are working together with us to look at how we're using guidance across the organization in the licences, in the Licence Conditions Handbooks, in the compliance inspections, et cetera, just to ensure that we're all on the same page in the organization.

And this is a really interesting project and bringing forward some interesting potential inconsistencies in the way it's managed that may be causing a little bit of concern with licensees that we're hoping to address.

That initiative is -- I think we'll see something out of that go into our regulatory fundamentals document, which will explain our regulatory philosophy.

We talked about it in our presentation. It'll be -- you'll see it in the fall for consultation.

It includes what our regulatory philosophy is, how we use the graded approach, risk-cost benefit, but also, it will probably articulate better our philosophy around requirements and guidance.

MEMBER McEWAN: I really look forward to seeing that because I think there is a real concern that, particularly the guidance part of the document, is interpreted very, very differently by different licensees doing the same thing and by different compliance officers. And I really think that that -- if you're going to succeed in your goal of harmonizing the whole process and making it easier to implement, it's probably the most important challenge you're going to have.

MS FORREST: Yeah. We're really excited about the fact that we're looking at it writ large across the licence conditions and the licences as well, so yeah.

THE PRESIDENT: So I'm going back to my fundamental clarity between the regulator and the licensee. And I've got to tell you, I was shocked at -- I don't remember if it was in a public hearing, meeting. Somebody

was saying they never read the guidance.

I remember there were two documents. There was the REGDOC and there was the guidance doc. There were two separate.

So a lot of the licensee find very, very comfort in being -- in us being prescriptive, saying "thou shall". They don't like "you may" because for "you may" introduce some creativity to the way of doing business.

And if you don't put them together, then it's totally prescriptive and there's no room for finding new approaches, new things.

So I'm not -- I will never accept separating the two. Improving the guidance is not being viewed as "thou shall" is a different issue because if we start looking at the guidance as a prescription for us ensuring compliance, then there's something wrong, as Dr. McEwan alluded to.

MS FORREST: Exactly the issues we're looking at.

And of course, the challenge is finding the right balance between the -- what they call performance-based objective-based regulatory approach and the prescriptive approach. And with the larger licensees, obviously the guidance is just that. It's a suggestion, but we don't want to stifle innovation and we want to be

performance based.

And we're looking at that more and more with a really, really -- real focus as the new policy analysis projects come forward. But having said that, as you get into the smaller licensees in the substance regulation, that's where the prescriptiveness is welcome by the small operators.

So it's a -- it's a really interesting challenge.

THE PRESIDENT: But we also -- since we introduced the Licence Condition Handbook where we actually -- both sides agree on how we're going to measure performance on some of the things, then the relationship with that to the guiding -- to the guidance should be very, very clear.

MEMBER McEWAN: But I think just -- just to your point, I think it's the small licensee who will interpret the "you may" in the guidance as "thou shall" because they haven't got the resources or perhaps even the experience to review carefully and appropriately the difference between "you may" and "thou shall".

MS FORREST: Sure. And we will make sure that that's clear and that's probably a good thing for some of those folks. For the others that are looking for flexibility, I think we will get more clarity through this

project, but also I would think that it's the licensing and compliance officers, the outreach in DNSR. Those guys are out across the country on the ground a lot and they can one-to-one, face-to-face address those issues with them.

THE PRESIDENT: Just not to belabour the point, but Ottawa is this -- I was going to say disease, but I think that's too hard, but it's finding a solution that's one-size-fits-all. So many many times we write a document that we hope will fit everybody and we don't make differentiation between NPP or SMR.

Just to your point between the large and the small research facilities, non-research facilities, we have to tailor it more to that, but it's easier said than done and, yes, there is some work to be done in that particular area.

Ms Velshi...?

MEMBER VELSHI: I have a couple of quick questions. Since we talk about stakeholder engagement, I wondered if you have ever entertained the thought of providing financial assistance to some key stakeholder that you really would value input from and they just don't have the financial resources to provide you that insight. Has that happened?

MR. MOSES: Colin Moses, for the record.

Yes, absolutely. In fact, you know, the

CNSC has their participant funding program and the terms and conditions of that program provide us a bit of flexibility to engage today and there are other areas that aren't necessarily directly related to licensing. So for example on the recent public consultation on Aboriginal engagement which provided guidance to licensees on their engagement activities with Aboriginal communities, we offered participant funding to support reaching out within their communities and gathering the input to provide more meaningful input into the document.

So we do have that option. We haven't used it a lot, but we are keeping it available and if there are opportunities to enhance the engagement I think the value of providing that funding means we get much more meaningful input to help inform our regulatory instruments.

THE PRESIDENT: Can I jump on this? So we give a substantial amount of funds to the CSA. Is that a good forum to bring the small licensee to the table?

MR. MOSES: Colin Moses, for the record.

So the people that are engaged and on the CSA are typically the larger licensees and their supply chain and service industries, so the smaller licensees aren't generally engaged in the program. The scope of the program doesn't necessarily cover their activities. So it's not necessarily the best vehicle for those licensees.

But what the CSA does bring to the table is a process by which they reach out to interested and affected stakeholders and ensure that they engage in the process as they develop CSA standards.

So, for example, when we encourage the CSA to develop a standard on nuclear emergency preparedness and response N1600, the first step that they did was to reach out to municipalities, police organizations, first responders, Health Canada, the CNSC and a number of other stakeholders and brought them to the table to get some input on the scope and approach they could take in that standard. And then they built a matrix technical committee that covered the different areas of those stakeholders to ensure they had a good cross-section of input in developing the standard. So they have certain advantages for that.

Typically we haven't used them for the smaller licensees, except in one case that I referenced in the presentation where we funded -- we leveraged the CSA process to build what they call a scheme committee to focus on the development of guidance for the certification of exposure device operators, which brought those licensees to the table so that they could work collaboratively on developing that guidance.

THE PRESIDENT: But you may want to explore or maybe bring maybe not the licensees themselves,

but their association, NGOs, and you may be able to construct a subset of the CSA to deal with the small licensees dealing with nuclear substances.

MEMBER VELSHI: And my second one was around REGDOC 2.2.4, on Fitness for Duty. I was kind of surprised to see that the scope of it -- I think I heard you say that you are kind of doing it in phases -- is limited to just worker fatigue. So has that changed or had I just imagined that it was going to cover a lot more than just worker fatigue?

MR. MOSES: Colin Moses, for the record.

No, you didn't mishear. I did make a reference that we are developing it in phases. The first phase is the hours of work provision to managing worker fatigue provisions and we are well advanced in that project. We did an initial public consultation. We had multiple -- or we had meetings with stakeholders to gather some more concrete input and we are near finalizing that document, subject to a final consultation round.

Meanwhile, leveraging the input we received through the discussion paper on a broader worker fitness for duty program, we are developing a document that outlines expectations around medical, physical fitness, psychological fitness, drug and alcohol testing. So that broader document will also be launched for public

consultation in this calendar year.

MEMBER VELSHI: Thank you.

THE PRESIDENT: Monsieur Harvey...? Monsieur Tolgyesi...? Dr. McEwan...? Ms Velshi...?

It looks like you have exhausted us. So thank you. Thank you for this presentation.

And we will continue.

--- Pause

THE PRESIDENT: Okay.

This concludes the public meeting of the Commission. Thank you for your participation.

We are going to move now to the in camera meeting, so those who are not involved in the next item, please leave the room.

MS McGEE: Thank you very much.

If you borrowed an interpretation device, please remember to return it at the reception and claim your identification card.

Thank you.

--- Whereupon the meeting concluded at 11:42 a.m. /

La reunion s'est terminée à 11 h 42