Canadian Nuclear Safety Commission

Commission canadienne de sûreté nucléaire

Public meeting

Réunion publique

October 4th, 2018

Le 4 octobre 2018

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

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

Commission Members present

Ms Rumina Velshi
Dr. Sandor Demeter
Mr. Timothy Berube
Ms Kathy Penney
Dr. Marcel Lacroix

Commissaires présents

Mme Rumina Velshi
Dr Sandor Demeter
M. Timothy Berube
Mme Kathy Penney
M. Marcel Lacroix

Secretary:

Mr. Marc Leblanc

Secrétaire

M. Marc Leblanc

Senior Counsel:

Mr. Michael James

Avocat principal:

Me Michael James

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Ottawa, Ontario / Ottawa (Ontario)

--- Upon resuming on Thursday, October 4, 2018
at 9:02 a.m. / La réunion reprend le jeudi
4 octobre 2018 à 9 h 02

Opening Remarks

THE PRESIDENT: Good morning and welcome to the continuation of the meeting of the Canadian Nuclear Safety Commission.

Mon nom est Rumina Velshi. Je suis la présidente de la Commission canadienne de sûreté nucléaire.

I would like to begin by recognizing that we are holding this Commission meeting in the Algonquin Traditional Territory.

Je vous souhaite la bienvenue, and welcome to all those joining us via webcast.

I would like to introduce the Members of the Commission that are with us today:

On my right is Dr. Sandor Demeter; to my left are Dr. Marcel Lacroix, Ms Kathy Penney and Mr. Timothy Berube.

Mr. Michael James, Senior Counsel to the Commission, and Mr. Marc Leblanc, Secretary of the Commission, are also with us on the podium today.

I will now turn the floor to Monsieur Leblanc for a few opening remarks.

Marc...?

M. LEBLANC : Merci, Madame la Présidente.

J'aimerais aborder certains aspects touchant le déroulement de la réunion aujourd'hui.

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

Des appareils pour l'interprétation sont disponibles à la réception. La version française est au poste 2, and 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 dès 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 our website for a three-month period after the closure of the proceedings.

Please silence your cell phones and other electronic devices.

Please note that 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 agenda CMD 18-M51 for the complete list of items to be presented today.

Et Madame Velshi va présider la réunion publique d'aujourd'hui.

Madame Velshi...?

THE PRESIDENT: Thank you.

The first item on the agenda is the Status Report on Power Reactors, which is under CMD 18-M53.

I note that we have representatives from the nuclear power plants in the room and also by teleconference. If we can identify who is with us by teleconference.

From Pickering, who do we have from there?

MS SMITH: Good morning. For the record, it's Stephanie Smith, Director of Ops and Maintenance, Pickering Nuclear, on the line.

THE PRESIDENT: Thank you.

Anybody else? Okay.

MS HERRERA: Yes. It's Paulina Herrera, it's the Manager of Regulatory Affairs.

THE PRESIDENT: Thank you.

MS WARD: As well, we have from NB Power, for the record, Krista Ward, Reg Affairs Manager, and Mark

Power, Station Director.

THE PRESIDENT: Thank you.

And anyone from Darlington?

MR. MALEK: Imtiaz Malek, Reg Affairs Manager for Refurbishment, and Sean Marshall, Health Physics.

THE PRESIDENT: Thanks very much.

Dr. Viktorov, the floor is yours.

CMD 18-M53

Oral presentation by CNSC staff

DR. VIKTOROV: Thank you.

Good morning, Madam President and Members of the Commission. My name is Alex Viktorov, I am the Director of Pickering Regulatory Program Division, today representing Mr. Gerry Frappier, the Director General of the Directorate of Power Reactor Regulation.

With me today are Power Reactor Regulatory Program Division Directors as well as technical support staff who are available to respond to any questions that the Commission may have regarding the Status Report on Power Reactors as presented in CMD 18-M53. This document was finalized on September the 27th of this year. I have the following verbal updates.

For Bruce there is a correction related to the worker's injury. A female security guard was in fact exiting a truck cab when she slipped. She didn't fall from the back of a transport truck.

Regarding Darlington Unit 2 Refurbishment, 388 out of 480 new calandria tubes have been inserted as of earlier this week.

For Pickering, Units 4, 5 and 6 are now operating at full power.

For Point Lepreau, the Exercise Synergy Challenge 2018, a national full-scale nuclear emergency exercise at Point Lepreau Nuclear Generating Station started on October the 3rd. This exercise continues until end of day today and involves the participation of over 35 government agencies and key stakeholders at the federal, provincial and municipal levels, including the utility New Brunswick Power.

This concludes the verbal update on the Status Report on Power Reactors.

CNSC staff are now available to answer any questions the Commission may have.

THE PRESIDENT: Thank you. I will open the floor for questions from Commission Members to CNSC staff and licensees.

Mr. Berube...? Dr. Demeter...? Dr.

Lacroix...?

MEMBER LACROIX: I'm curious, how many hours, man-hours, does it take to change a pressure tube, calandria tube pressure tube?

DR. VIKTOROV: I would suggest that a representative of OPG Darlington will take this question.

MR. MALEK: Yes. This is Imtiaz Malek, Reg Affairs Manager for Refurbishment.

I can't give you an exact figure. What I can tell you though is that we are scheduled to finish the calandria tube installation on October the 28th. It does vary a little bit depending on the issues that they run into, but generally as I understand it there are targets which are passed on on a daily basis to the folks here, but it does vary little bit. It has become fairly routine, I can't give you an exact number, but I will pass that on to Ms Riendeau if you so require.

MS RIENDEAU: Nathalie Riendeau, Director at Darlington Regulatory Program Division.

Like Mr. Malek said, we don't really have an exact figure for each replacement of the calandria tube. The old series was expected to last about 103 days and that was for the 480 tubes, so that gives you an idea of the approximate duration for each tube.

THE PRESIDENT: Thank you.

Ms Penney...?

MEMBER PENNEY: Yes. A question around the injury. It sounds like it was a woman, in the report it says it's a man. Has an investigation been done? What was the root cause, a slip, not a fall?

DR. VIKTOROV: Indeed in the report it was implied it was a man, but that's a correction we want to bring to your attention.

And I will ask a Bruce Power representative to provide additional information.

MR. BURTON: Maury Burton, Senior Director of Regulatory Affairs from Bruce Power, for the record.

The injury in question occurred when the female security guard was exiting the truck cab after doing a search at our main gate to come on site. What occurred, there is a boot brush on the step for heading up into the truck cab for the trucker to wipe their feet off and when she was backing out backwards she placed her foot on that brush, slipped and lost grip of the truck cab and fell backwards, braced herself and ended up fracturing her wrist.

MEMBER PENNEY: So it was a lost time injury?

MR. BURTON: That is correct. She was off for a couple of weeks. She has returned to work on

modified duties until her doctor clears her for full-time regular duties.

THE PRESIDENT: I have a couple of quick questions.

For Pickering, for Units 5 and 6 -- and I know you have said they are back in service -- when you say "derated due to debris run", can you just tell me what that means?

DR. VIKTOROV: It's Alex Viktorov, for the record.

It relates to the algae run, so it's a continuation of the situation that we faced during the late summer and right now the situation is much better, but there's still some algae present.

THE PRESIDENT: Thank you.

And then for Unit 7 where it is derated to 98 percent, it says "in order to maintain adequate trip margins". That kind of sounds a bit concerning, so what does that mean?

DR. VIKTOROV: It's again not a unique situation. Units see this kind of adjustment from time to time, but I would ask OPG to provide the exact detail on the situation.

MS SMITH: For the record, this is Stephanie Smith, Director of Ops and Maintenance, Pickering

Nuclear.

So on Unit number 7, T3F is an instrumented loop that measures boiler inlet temperature. So there is no degradation of the safety margin on the system. The consequence of this deficiency is an economic penalty.

The way that the system is set up is that it is set at a temperature and if it increases to set point the channel will open. It requires two out of three channels to be open for the safety system to trip the reactor. We have multiple parameters that actuate based for all analyzed failures. So right now the T3F temperature is reading 2°C higher than the actual temperature in the core. It still responds normally to all temperature changes and testing and it's fully available to meet its safety function and trip the channel if the temperature increases.

This has led to a requirement to frequently have the unit derated 2 percent to maintain the margin to trip as our procedures required. Currently we are in a process of evaluating repair options on T3F and we are systematically considering potential solutions with thorough review prior to implementation.

THE PRESIDENT: Thank you.

And then just a quick more editorial

comment for Darlington. I think it would be good if you just started off when you are giving an update on the refurbishment that it is progressing per plan or -- it's hard to tell just from the description here how that project is moving along.

MR. MALEK: This is Imtiaz Malek, Reg Affairs Manager.

Would you like me to give you a brief update at this point?

THE PRESIDENT: Yes, please. That would be good, Mr. Malek.

MR. MALEK: Okay. So overall we are 32 days ahead of schedule, day 720 of the outage. Important to point out that no alpha uptake has occurred since the February 2018 event. We expect to complete Unit 2 refurbishment in November 2019. We hope to come and give a more wholesome update to the Commission in February of next year.

The calandria tube installation is currently on critical path and, as I said earlier, the forecasting is for it to be complete by October 28th, one day ahead of schedule.

Fuel channel installation will start after we have had an inspection of the calandria vessel for foreign metal material exclusion. We expect to reach the

first reactor control hold point, which is not the regulatory one, round about mid-January and then the first of the CNSC one round about May next year. And to meet the ends of the requirements of the four hold points for CNSC we have been meeting with CNSC staff via videoconferences every week and once a month with Ms Riendeau and we have been monitoring the return to service deliverables with the CNSC staff. We have a dashboard and we are progressing along to ensure that the reactor control hold points and the regulatory hold points progress smoothly.

We have submitted also the first -- for information to the CNSC staff -- completion assurance documentation to look at as a practice run to show that will this be adequate as we progress towards the regulatory hold points.

I think that is the whole thing that I have at this point in time. The work is progressing well, ahead of schedule, there are no major issues or impediments at this time.

THE PRESIDENT: Thank you very much for that.

Staff, did you want to add anything?

MS RIENDEAU: No. Mr. Malek's summary was complete. Thank you.

THE PRESIDENT: Good. Thank you very

much. Thank you for the update.

The next item on the agenda is the 2018 Annual Program Report Regulatory Framework Program, as outlined in CMD 18-M54. I will wait for the new team to get settled in and we can get started on that.

--- Pause

THE PRESIDENT: Okay. I will turn the floor to the CNSC staff for their presentation.

Mr. Torrie...?

CMD 18-M54

Oral presentation by CNSC staff

M. TORRIE : Bonjour, Madame la Présidente, membres de la Commission.

My name is Brian Torrie, I am the Director General of the Regulatory Policy Directorate.

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

We also have other staff here that are available to support and answer any questions you might have after the presentation.

We are pleased to be here today to present

our regular update on the CNSC's Regulatory Framework Program. The last update was about a year ago in October of 2017.

Our presentation today will cover three areas. First of all, for the benefit of new Commission Members and the general public, we will give an overview of our Regulatory Framework Program; second, we will give a little history of the program's evolution and brief highlights from the past year; and finally, our involvement in some of the Government of Canada's reform initiatives, both legislative and regulatory, and the challenges we face as we look ahead to our priorities.

So, as I said, first, we will have a look at our regulatory framework. I will explain what it is, how it compares internationally and domestically, and then I will highlight how we manage projects within our framework, focusing on the Commission's involvement in our processes.

So looking at this slide -- which is this slide -- this is an overview of the CNSC's Regulatory Framework Program. We can see that there are several elements that can be grouped into two broad areas.

In blue, we have our regulatory framework processes and outreach work.

The structured collection of documents we

see here -- such as the regulations, regulatory documents or REGDOCs, the Act, discussion papers and nuclear standards -- is collectively known as the CNSC's regulatory framework and supporting documents.

These documents and their review cycles are managed by our group through the use of the Regulatory Framework Plan.

Through the review and development of those documents, we engage in a variety of consultation and outreach work. I will discuss our consultation work in a few slides later, but for now I want to highlight our outreach role.

Our team is responsible for "Meet Canada's Nuclear Regulator" -- formerly known as CNSC 101 -- which is an outreach program that allows us to explain our regulatory context, always in close collaboration with our colleagues across the CNSC, to various stakeholder groups like "host" communities or communities near nuclear facilities, Indigenous communities, unions, civil society organizations, or even new CNSC employees.

In yellow, we have another key part of our framework program, which is to coordinate the CNSC's participation in the Government of Canada's agenda for legislative and regulatory reform. This means taking part in cross-cutting initiatives like providing CNSC's position

on environmental assessments under the *Canadian Environmental Assessment Act* through the Major Projects Management Office of Natural Resources Canada or coordinating CNSC's input into the new Cabinet Directive on Regulation, to name a few of the things we are involved in.

The overall goal of the Regulatory Framework Program is to have regulatory instruments that make expectations clear to licensees, the public, Indigenous groups and other stakeholders. And certainly, as time passes, these regulatory expectations must be adapted so that we can be in the best position possible to regulate a complex and fast-paced nuclear industry. Our Regulatory Framework Program ensures that all parts of the organization are involved in the evolution of our requirements and guidance.

This slide is a quick view of our regulatory framework at the CNSC. I will just quickly go through each section of the pyramid -- I'm sure some of you have seen it before -- starting at the top with the *Nuclear Safety and Control Act*, or NSCA.

The NSCA, as I'm sure you know, is our enabling legislation. It establishes the Commission, its mandate and authorities.

The NSCA also authorizes the Commission to make regulations, subject to Governor in Council approval.

This brings us to the second tier. Here we have the 13 regulations which set out high-level requirements that licensees or applicants must meet in order to obtain or retain a licence. The Commission makes and approves all regulations and regulatory amendments before the Governor in Council releases them.

In the third tier, we have licences and certificates issued by the Commission or its staff delegates. They set out specific requirements for each of our various licensees and facilities.

The largest segment in red is where we do most of our work.

Regulatory documents, or REGDOCs, provide greater detail than regulations in terms of what licensees or applicants have to do to meet our requirements. They also provide practical guidance on how to meet our expectations and can be referenced in a licence. They are all approved by the Commission.

Now that we have seen what the framework looks like, I would like to briefly touch on how we compare to other regulators, both domestically and internationally.

First in comparison, we looked at the structure of our regulatory framework and the timing and extent to which other regulators review their regulatory documents. We then looked at the levels of consultation

and engagement, and approaches used by others.

Internationally, we looked in particular at the United States, the United Kingdom and France.

Domestically, we looked at other lifecycle regulators such as the Canadian Food Inspection Agency, the National Energy Board, Transport Canada, and Offshore Petroleum Boards.

It is useful to take stock of what others are doing, and I will highlight a few key observations on my next slide, but for the most part, different regulatory contexts limit in-depth comparisons. For example, some regulators have different reporting relationships to their respective Minister, or some may have more prescriptive regulatory models than the CNSC, given the nature of what they regulate.

However, overall we found that CNSC compares well with other regulators, but there are some areas we can improve.

So a few key observations came through in our comparison exercise.

First, we have fewer regulations than most and we are generally less prescriptive than say the U.S. NRC or Transport Canada. This gives us more flexibility with regard to our document structure. We have found that it is unique -- and that's because it is based on our

Safety and Control Areas. This allows us to make clear links between our framework, our licensing and our compliance activities.

Also, similarly to many regulators, we conduct cyclical reviews of our regulatory documents. Most other regulators have a five-year review cycle, which is in line with the IAEA recommendation of reviewing regulations every 5 to 10 years. The U.K. and France have a 3-year cycle and publish the "next review date" in the document itself. We publish our review plan on an annual basis and consider it to be evergreen. This helps us to be more flexible and responsible to new priorities and/or industry challenges, such as regulating new technologies.

In the second place, we also looked at how we compare in areas related to public consultation. At the CNSC, we have extensive and varied consultation methods for all framework projects, including our guidance documents. It should also be noted that most other regulators do not consult on their guidance documentation, only on their regulations.

Our consultation initiatives include public and Indigenous people outreach, where participant funding can be made available as appropriate, and stakeholder feedback is taken into consideration.

We generally provide consultation

opportunities for 60 to 120 days, which is above the mark for most other regulators. For example, France generally consults from 21 to 30 days; the US and UK consult for a maximum of 90 days.

That being said, we also noted areas for improvement. For example, while the CNSC does provide comments via email, or the opportunity to provide comments by email, the US NRC has a more sophisticated online tool for collecting comments and feedbacks on its projects that we would want to consider.

In addition, we need to look more for best practices in engaging Indigenous groups and members of the public. This must be done with consideration of the amount of consultation we do, how we do it, and the capacity of all stakeholders to participate.

Now, speaking of the projects, I'm going to turn our attention to the next slide, the process we take for managing a regulatory framework project.

First of all, we have the question of what is a framework project. It can be the development of a new REGDOC or the amendment of an existing REGDOC, the development of a new regulation or an amendment to a regulation, or essentially the review of any document within our framework.

Looking at the slide, a regulatory issue

can arise from a variety of situations. For example, an accident, such as Fukushima, or the need to respond to advancements in science and technology, such as small modular reactors.

An issue can also be brought forth by anyone who raises a safety or security concern, or perhaps a lack of clarity in interpreting requirements or guidance. Certainly, an issue can be brought forth if there is a regulatory uncertainty around a project and inconsistency in compliance with requirements.

So regulatory analysis is undertaken to clearly identify the scope of the regulatory issue, and to identify and analyze potential or expected impacts on various stakeholders. It's also used to determine and undertake, early in the process, appropriate consultation activities.

Over the course of analysis, discussion papers are often used to get early input from stakeholders. For example, a discussion paper was developed to seek feedback on "Regulatory Strategy, Approaches, and Challenges for SMRs."

But discussion papers are not the only form of outreach that takes place during analysis. For instance, we can hold stakeholder workshops, have discussions with other nuclear regulators; we can have

dialogue with other government entities at all levels. All these methods help to inform the CNSC approach throughout the analysis and instrument development process.

The key goal of analysis is the identification of the most appropriate regulatory instrument to be used, be it a new or amended regulation, a REGDOC, or another form of regulatory action. Sometimes the regulatory instrument identified may not originate with the CNSC, as is the case with the CSA Group standard, for example. And of course, when the project at hand involves the review of an existing document, it is possible that analysis finds nothing to be changed at that time. Status quo is also an option.

In the next few slides, or the next two slides of the presentation, we'll summarize the process for making regulations and developing REGDOCs. They are very similar, so I'll spend a bit more time on this first slide and highlight the differences in the next slides with respect to REGDOCs.

Essentially, we've broken down the process on this slide into three steps: developing the proposal, developing the regulatory package, and making the regulations.

In the first step, I want to highlight the importance of pre-consultation. When considering a

regulatory amendment, the CNSC engages with stakeholders very early in the process through information sessions, workshops, presentations at conferences, discussion papers, et cetera. We talked a little about this in the last slide.

I should also mention that we are active in working with stakeholders outside of the development of regulations or REGDOCS. It is really about building relationships or making sure that various parties are aware of our work. For example, we are involved with the Multi-Interest Advisory Committee that provides advice on issues related to reforming environmental assessments; we have our "meet the regulator" program, as I mentioned earlier; and we meet with civil society organizations to discuss their issues and concerns as well.

So based on these early consultations and the feedback we get, a draft regulatory package is prepared. It includes the draft regulations and a regulatory impact analysis statement, or RIAS.

The Commission is briefed on the proposed changes through an in-camera session, and the package is finalized and approved by the Commission. It then goes to the Governor in Council, who approved public consultation on the draft document through *Canada Gazette*, Part I, typically a 30-day period. The feedback received through

the *Canada Gazette* process is considered by CNSC staff in developing the final regulatory package.

At this point, the updated proposed regulation package is presented to the Commission in order to make the regulations. Following the Commission's making of the regulations, the final package is brought once again to the Governor in Council for approval to publish in *Canada Gazette*, Part II, which brings the regulation into force.

On to the next slide.

As I said earlier, this slide outlines the process for developing REGDOCs, which is similar to that of regulations. Steps include analysis, early consultation and feedback, then the development of a draft REGDOC, followed by public consultation and, finally, Commission approvals.

The consultation process for draft documents has two steps: First, a consultation step, where the public, licensees, and interested organizations are invited to comment on draft documents. And secondly, an invitation to provide feedback on all comments received, where all the comments received during the first consultation period are posted on the CNSC website, and stakeholders have an opportunity to view these comments and provide additional feedback. The CNSC reviews all comments

received during the public consultation stage and determines if any changes are necessary to the document.

The document is then presented to the Commission during a public meeting for review and approval. The Commission's role is therefore significantly different, as the Commission alone approves REGDOCS. There is no Governor in Council approval needed like there is for regulation-making.

So now let's take a look at how our regulatory framework evolved over the last years and what goals we have and how far we've come over this past year and the previous four years.

Beginning in 2013, the CNSC began its framework modernization initiative. The objective was to ensure that regulatory requirements were modern, clear, and supported by guidance where necessary, and that the CNSC would be ready to regulate new and emerging technologies.

It was decided that the clarity of the framework could be improved by adopting a different structure and naming convention and by consolidating and reducing the total number of regulatory documents.

We started with over 120 documents in the CNSC framework library, all under different nomenclatures such as policies, standards, guides, requirements, info docs, fact sheets, et cetera. Our goal was to review them

all and consolidate them into around 58 REGDOCS, logically organized into three areas: one, regulated facilities and activities; two, safety and control areas; and three, other regulatory issues of importance.

As it stands today, 39 REGDOCs have been published -- actually more, if you count multi-volume versions, but counting the numbers can get a bit confusing. Only 37 documents remain to be reviewed and replaced. We call those remaining documents the legacy documents.

Our original plan targeted a 2018 completion date for all this work, but last year during the Commission update, we indicated a more possible completion date of 2020. We are still on track to supersede all remaining legacy documents and complete the reg framework documents by 2020.

In addition to this, we are conducting reviews of all our documentation. This work is ongoing and will become more prominent once the framework is completed in 2020. This means re-examining all our regulatory stock, including our REGDOCS, on a regular basis to make sure that our requirements are well defined, up to date, and that the choice of regulatory approach is most appropriate for achieving safety and security objectives.

Now we're just going to have a quick look at where we stand and what we've accomplished so far.

The graph on the left shows progress since 2013/14 to review CNSC legacy documents. Out of the more than 120 legacy documents referred to earlier, only 37 remain to be reviewed and converted into the new framework.

The graph on the right shows progress made to modernize the framework. Overall, CNSC staff continue to make steady progress on populating our regulatory framework documents.

We now have a framework that is clearer, more transparent, and more responsive to emerging issues. The results of the past few years indicate a steady trend of publishing approximately seven to eight REGDOCs per year. Last year, we published 13 REGDOCs, but the increase was mostly the result of several documents being rebranded under the new naming convention, that being that they were largely just administrative changes.

I will touch on a few of the key documents from the past year in the next slides.

So in the next few slides, I'm going to highlight a few of the regulatory framework projects that CNSC has worked on in the last year.

First, we will start with the regulations. The CNSC is reviewing its *Radiation Protection Regulations*, *Nuclear Security Regulations*, *Nuclear Non-proliferation Import and Export Control Regulation*, and the *General*

Nuclear Safety and Control Regulations.

For the *Radiation Protection Regulations*, given the changes to international benchmarks and the adoption of new radiation protection guidance worldwide, CNSC staff determined that they should be modernized.

Following our briefing to you in August, the CNSC is currently working with the Department of Justice on drafting amendments to the regulations. We are targeting public consultation in *Canada Gazette*, Part I, later this fall.

CNSC staff is working on amendments to the *Nuclear Non-proliferation Import and Export Control Regulations*. The proposed amendments here aim to modernize the regulations to align with current international guidelines for the control of nuclear and nuclear-related imports and exports.

Staff is also exploring options to amend the *General Nuclear Safety and Control Regulations* to reflect best practices for safeguarding of nuclear material. The goal here is to ensure the continued effective reporting and monitoring of materials and activities in Canada. For this project, the CNSC is targeting public consultation in the *Canada Gazette*, Part I, in 2019.

Finally, the *Nuclear Security Regulations*

are also being reviewed to reflect modern regulatory practices and take into account new evolving security threats and technology.

Moving on now to the REGDOCs, an additional 13 REGDOCs were published since our last update to the Commission, either as new documents or as revisions of existing documents, each taking into account operational experience and the need for additional guidance in some specific areas of regulatory oversight.

Over the last year, we updated our regulatory expectation in areas of managing drug and alcohol use, safety culture, waste management, and the glossary of terms, to name a few of the highlights.

While work to date represents a significant accomplishment, it is clear that work remains to be done, particularly in light of the plan to modernize our framework by 2020. Staff continues working on over 20-plus REGDOCs at various stages of analysis and development. Some of the REGDOCs are new documents, while others are revisions or updates of existing documents.

A complete list of REGDOCs published to date and currently in development can be found in the annex provided to you.

Finally, in addition to the regulations and REGDOCs, there are other instruments available to the

CNSC when considering how to address a regulatory issue. In this respect, the CNSC often leverages international and domestic best practices in the form of standards to help establish regulatory expectations.

Nuclear standards produced by the Canadian Standards Association, or the CSA Group, are a particularly important component in support of the CNSC's regulatory document framework. In addition to CSA standards, we also leverage codes and standards produced by international organizations such as the International Atomic Energy Agency, the American Society of Mechanical Engineers, and the American National Standards Institute.

While the standards are useful supports for our framework, we need to ensure their accessibility to the public. The CNSC has arranged with the CSA Group for their nuclear standards to be available through the CNSC's website. In addition, notifications of draft standards issued for public review are also forwarded to the CNSC's 2,500-plus stakeholders through our email distribution list, and we also use other consultation and outreach opportunities to explain the role of standards in supporting our reg framework.

Finally, I want to touch now on our upcoming challenges and priorities.

Regulatory reform has been an important

part of the Government of Canada's agenda over the last several years, including both the current and former government. The CNSC has been and continues to be actively involved in many reform initiatives. And in the next few slides, I'll highlight a few of the main ones for you.

First, there is Bill C-69. In February 2018, the Government of Canada tabled a new and updated legislation related to environmental and regulatory processes, led by Natural Resources Canada, Environment Canada and Climate Change Canada. As a regulator, we are closely involved in how these changes will be implemented.

We are also working with Natural Resources Canada to participate in the broader implementation of the new Cabinet Directive on Regulation, which includes new expectations for outreach, Indigenous consultation, and gender-based analysis.

So I'll briefly touch on our role in relation to the other pan-governmental initiatives and readiness to regulate.

So starting with Bill C-69, under the current system, the CNSC, the Canadian Environmental Assessment Agency, and the National Energy Board are responsible authorities. Each is responsible for conducting environmental assessments for projects that fall under their mandate.

Bill C-69 proposes to overhaul the current federal environmental assessment process. The changes include a new governance model. The former Canadian Environmental Assessment Agency, or CEAA, will become the Impact Assessment Agency, or IAA, and lead all federal assessments for major or designated projects. The new agency will also be responsible for coordinating all Crown consultation activities.

Integrated panels with CNSC and the IAA board members are expected to oversee impact assessments of designated nuclear project, where assessments are broadened beyond environmental factors to include economic, health, and social impacts, as well as impacts on Indigenous rights.

At present, the government is in the process of establishing key regulations in support of the implementation of this Bill. The priority regulation for most external stakeholders is the Project List. This regulation will set out the criteria under which a project will undergo a federal impact assessment review. The development of the Project List Regulations is lead by the CEAA, with CNSC staff advising Natural Resources Canada on the best approach for thresholds for nuclear projects.

Bill C-69 has passed through the House of Commons and is currently at second reading in the Senate.

We anticipate the Bill will come into force before the next election.

Another government-wide initiative that we are working to implement is the Cabinet Directive on Regulation. It sets out the government's expectations and requirements for the development, management, and review of federal regulations.

The directive includes several key elements. First, an increased emphasis in Indigenous engagement and consultation, more specifically, early consultation and more stakeholder consultation. Gender-based analysis is being given greater scrutiny; I'm going to touch a bit on that on the next slide. There's also an emphasis on conducting periodic review of regulatory stock and assessing the potential for regulatory cooperation with other jurisdictions, as well as carefully assessing the environmental effects of regulations.

Overall, the CNSC has programs in place that already address many of these requirements, and we are well positioned to implement the activities required by this new directive.

I mentioned gender-based analysis in the context of the Cabinet Directive on Regulation, and it is clear that it has generated many questions and requests for clarity in the past two years.

Gender-based analysis has been a required item going to Cabinet for several years now. It is not an entirely new process and definitely predates the current government by at least a decade. In effect, it requires that potential impact of a regulation be assessed for its impact on gender and other related issues. For example, we might look to see if a regulation or REGDOC dealing with the testing of a new drug or perhaps new safety equipment was done with both men and women participants, perhaps also in various age groups, and in different climates or areas.

Under the new Cabinet directive, however, the government has placed greater emphasis on the issue and has set higher expectations for rigour and transparency of the analysis.

In the last two years, CNSC regulatory policy staff have been participating in training activities with Status of Women Canada, who have developed a course on GBA+, and most recently took part in a working group to help the Canada School of Public Service build a government-wide course on the requirements of GBA+ and how to achieve them.

CNSC is building knowledge and capacity to ensure GBA+ is considered in all its activities. We have an internal working group that is considering the broader policy implications for the whole of CNSC. But for the

regulatory framework, we take GBA+ into consideration during the analysis phase of our document review process and we apply this lens to all our documents, including REGDOCs.

Looking ahead, now. Finally, we are aligning our regulatory modernization initiatives, priorities with the broader context as we move forward.

As noted previously, we are currently working on several key regulatory areas, such as international guidance on radiation protection, as well as regulations on nuclear security, cybersecurity, and non-proliferation agreements.

We are focused on the impacts of new technological developments, in particular around small modular reactors. For example, we are actively involved in the pan-Canadian SMR Roadmap. This process is led by Natural Resources Canada and was put in place to establish a long-term approach to implementing SMR technology in Canada. As part of that process, we are playing a key role in advising both government and external stakeholders on issues related to SMR safety, transportation, and other potential regulatory issues. The results of the pan-Canadian roadmap will be released in November at the 1st International Conference on Generation IV and Small Reactors.

Finally, we are looking at our own legislation and regulatory framework to ensure that it is ready to adjust to the changes brought about by new technologies.

So now to conclude the presentation, I'd like to leave you with a few key messages in relation to our regulatory framework goals.

First, we are working to finish populating the document framework and retire the rest of our legacy documents by 2020. Second, we will continue to modernize our regulations. And thirdly, we will implement a cyclical review cycle that is based on priority issues for all our regulatory documents.

On those first three priorities, we have to be aware that the pace of implementation should recognize capacity issues and consultation fatigue with Indigenous groups, industry, Translation Bureau, Justice Canada legal review, central agencies, and the general public. We also need to take into account the timeliness for regulation-making in the broader federal context. We need to see if we can streamline processes and speed things up for our own regulations. We also need to endeavour to minimize administrative burden in the regulations themselves. At the same time, we need to focus on clarity and safety to further enhance our robust regulatory

framework.

Of course, we are doing all this while making sure we continue to work on the files of importance for Canadians, like new technologies, and to be ready to regulate when we're needed. And finally, we need to continue enhancing our processes for outreach and consultation, to address newer areas of focus such as GBA+ and cost-benefit analysis.

We have made steady progress in the last five years and a great deal of progress in the last year, thanks to the broad collaboration across the CNSC and with our stakeholders. We have a plan to continue to do so through 2020 and beyond after our document framework has reached maturity.

This ends our presentation today on the status of the framework. Thank you for your attention, and we are now available to answer your questions.

THE PRESIDENT: Thank you for that very, very helpful presentation.

I'll open the floor for questions from Commission Members on this presentation. We'll start with Dr. Demeter.

MEMBER DEMETER: Thank you for the presentation.

A number of questions. I'll start with

the first one. You talked about comparing it to other Canadian regulators. And the one that I was most curious about on how we are the same or different is actually with Health Canada and the *Food and Drugs Act* and all its regs.

Are there any sort of lessons learned from that Act and our Act on how they -- sort of protection and safety?

MR. TORRIE: Brian Torrie, for the record. We didn't really go into any depth in terms of that kind of comparison.

As I was saying earlier, a lot of those comparisons are difficult to make because of the context of how they regulate. They report to a Minister, we report to a Commission and the nature of our business.

I think what we're looking at now, and our first review was very kind of preliminary in terms of comparisons, is trying to look at what they do for best practices to engage the public because we think that's where our framework, or where our consultation is most in need of improvement right now.

But as for a detailed comparison with Health Canada, we haven't really done that.

THE PRESIDENT: Dr. Lacroix?

MEMBER LACROIX: Thank you, once again, for this helpful presentation. On slide 4 concerning the

Regulatory Framework Program Overview, on the blue side you mention *NSCA* and regulatory modernization. Does it mean that the *NSCA* is under review right now?

MR. TORRIE: Brian Torrie, for the record. No, it's not officially under review. What we do is, we have -- about a year and a half ago we did our own kind of internal review of where we could make improvement in anticipation of possibly the government asking for a review or starting some kind of review of the Act, but right now there's no initiative to review the Act.

I'd say the government's legislative agenda is pretty full right now, but when the time comes we'll be ready to participate in that review.

THE PRESIDENT: Can I just ask on that then, so when we did our own internal review were there any big issues that we thought would be helpful -- I mean, it is 18 years old -- that we could have an opportunity to address sooner rather than later?

MR. TORRIE: I wouldn't say there was any significant gaps based on our review. And we'll probably do another round of review following the implementation of the *Impact Assessment Act* because that could bring up some issues. But right now there's no significant gaps in the legislation.

THE PRESIDENT: Thank you.

MEMBER LACROIX: On slide 7 now, the last bullet concerning the U.S. Nuclear Regulatory Commission, they have an online comment submission capability. Is it conceivable for CNSC to develop such a tool and, if so, I would like to hear from you?

MR. TORRIE: I'd say it's conceivable, but I'm not the IT person that pays for it and sets it up. So, from a policy perspective, it's certainly doable and we've seen actually in the Canadian context, the Canadian Environmental Assessment Agency has adopted similar online methods of implementation.

Our focus over the past few years has really been on updating the REG framework, working on the documents and now I think we have a bit more of breathing room now to look at these kinds of initiatives that have improved the consultation I was talking about earlier.

MEMBER LACROIX: But at first glance, what are the pros and cons of such tools, any idea?

MR. TORRIE: Well, initially I think in looking -- sorry, Brian Torrie, for the record. Initially in looking at any kind of IT initiative like that there's always the cost issues and implementation and then accessibility for all the groups that you want to consult.

So, in areas where they might have less access to the internet, it doesn't work as well.

And also, in this age of social media and instant response, you have to develop a mechanism made to monitor those comments, and then make sure that you can be timely in responding to them and managing them.

So, those are some of the challenges that come to mind right off the top of my head.

THE PRESIDENT: Ms Penney?

MEMBER PENNEY: Thanks. For a regulatory nerd like me, this was a wonderful presentation. Thank you very much.

Of course, I'm going to ask about Bill C-69, it's a two-part question. How does it change or affect the way we as a Commission operate and the CNSC as a whole? And the second part is, is what's the schedule for the project list regulation schedule/process, because I'm sure we have lots of people watching today who would be interested in intervening or providing comment on that project list?

MR. TORRIE: Brian Torrie, for the record. I'm going to ask Candida Cianci to answer the question more fully than me.

But just in general, just to summarize the key changes are the decision-making. So, under the current Act the Commission is the responsible authority making decisions on the environmental assessments, and now we have

the possibility of a new Act that takes broader scope of projects and the decision-making doesn't rest with the CNSC anymore, it would rest with Cabinet for our projects.

Then the second component of that would be the developments on the project list regulation that are under review and the changes to the project list will impact the amount of projects that would go to the impact assessment for a decision on the impact assessment, keeping in mind that the Commission always has the authority on licensing.

But I will just ask Candida to add to that answer.

MS CIANCI: Candida Cianci, for the record. So, I'm the Director of the Environmental Assessment Division.

So, to complement Mr. Torrie's response, I think those are the major changes in terms of the impacts to the CNSC. I could go into a little bit more detail, if you want, in terms of...

So, Mr. Torrie did mention that the scope of the assessment would also be broadened, so looking at gender base plus but also socioeconomic factors as well as Indigenous knowledge will now be requirements of the impact assessment.

In the case of an assessment with the life

cycle regulator such as ourselves, Mr. Torrie mentioned it would be an integrated assessment. So, we are collaborating and we do have a strong relationship with the Canadian Environmental Assessment Agency and we expect that to continue as we move forward in terms of determining more fully what does that mean and what does that look like.

And then, in terms of your question about the project list, there was an opportunity earlier this year between April and June for the public to provide comments on the criteria for how to revise the project list from what it currently is under *CEAA* 2012, and then, the Government of Canada has indicated that there will be a subsequent opportunity this fall.

I don't have the specific timing, we haven't committed to one yet, but where the public will actually be able to comment on their regulatory proposal. So, what that project list will look like we should see later this fall.

MEMBER PENNEY: So, just so that we can picture what this would look like, if there's a project that's on the project list which is a project that we would licence, and you say -- Mr. Torrie, you said that we maintain, or the Commission maintains the authority for licensing, but the environmental assessment is done by the new Impact Agency, what does that look like? Is it a

two-part process, or is it a combination with a joint panel? Do we know yet?

MS CIANCI: Candida Cianci, for the record. So, the way that the bill is written so far -- and I'll just nuance that it's currently with Senate for consideration -- but the way that the bill is written currently is that licensing would be heard as part of the impact assessment, so it is striving for that one project/one assessment.

So, in the case of an integrated assessment with CNSC, the Panel would be given the powers, and that's still to be determined as well because those powers would have to be given under the *NSCA*, but the intent is that they would also make the licensing decision.

And the way the bill is written currently is that there would be -- the President of our Commission would recommend one Member of that Panel and there would be a roster that would be pulled from.

MR. TORRIE: Yeah, Brian Torrie, just to add a bit to that to give a bit of context. If you look at some of our past, what we then called joint review panels, these would be more like called integrated reviews, like for the deep geological repository, it would be a similar kind of setup to that.

So, it's not something that's brand new to

us.

MEMBER PENNEY: Thank you.

THE PRESIDENT: Mr. Berube?

MEMBER BERUBE: I'm very curious about the IAEA and the impacts too, obviously. It looks like there's going to be some shifts in the way things are administered over right now, but because we're adding so many categories outside of the current environmental impact assessment, what do the timelines look on in terms of expansion to get one of these things done?

You know, right now I mean the EAs are taking forever. What kind of timelines are we looking at if we have to do one of these of new things?

MR. TORRIE: Brian Torrie, for the record. I'll ask Ms Cianci to answer that question.

MS CIANCI: Candida Cianci, for the record. So, currently if CNSC were to conduct an environmental assessment under *CEAA* 2012 we are committed to undertaking that within a 24-month timeline, it's a federal timeline, so only the time that the federal authorities are working on that it doesn't include the time where a proponent is working on technical studies and providing us information.

And the way that the bill, again, is written for IA is that for an integrated assessment with

CNSC there are various steps. So, the early planning phase would be 180 days and then, from the establishment of a panel to the IA decision, we're looking at 300 federal clock days.

There are, as well, provisions in the bill where the Minister can extend the timelines if we need it and it could go up to 600 days for that period that I was just speaking to.

So, from what we can see it does add timelines to what we're currently used to, but it's difficult to say at this point just how much would that look like. It really would, I think, depend on the type of project that we would have before us.

MR. TORRIE: Brian Torrie, for the record. Just to add to that. One of the key elements of the new legislation is the early planning phase and the idea there is that if you have that early planning phase well laid out that will address a lot of the issues up front and will lead to a shorter, tighter process with, say, fewer information requests and less time as you go through the review process.

So, it's key to understand that the focus now is on the early planning part of it to try and make the process run that much smoother. But, you know, it's dependent on so many different variables about how much

work the proponent's done to provide information, what the panel wants to -- or the review panel wants to focus on, all these different variables at work.

But I think the government is trying to learn from past experience on environmental assessments and where the focus should be on the front end and that's really the objective here.

THE PRESIDENT: Okay. Dr. Demeter?

MEMBER DEMETER: Thank you. This is more of a query about regulatory philosophy. You had mentioned comparing to the NRC which has a much more prescriptive framework where they set the bar, they prescribe the bar and that's what people meet.

The Canadian situation is a little bit more agile, it's got some benefits that it's not as prescriptive and a lot of the time it's up to the licence applicant to tell the regulator how they're going to achieve and then regulator decides whether that's appropriate or not.

One of the risks of that is different bars for different licence applicants who have the same kind of function. Is there a mechanism to monitor the homogenous or heterogeneous application? That's one of the risks in a less prescriptive performance-based model versus a prescriptive one because the bar is set largely by the

applicant and the bars can be quite different.

So, is there a way to monitor that, because that's one of the comments I hear back is that the applications can be quite different between similar settings. Is there a way to monitor that?

MR. TORRIE: I was looking to the back of the room to see if someone from the operations side wants to speak to that as well.

But I would just say that part of being less prescriptive is also about having flexibility and that's sort of where we've gone with our REGDOCs, providing flexibility for requirements and guidance and also having the flexibility for implementation and that's really where the regulatory policy side turns into the operations side.

So, I'll just refer it to Mr. Jammal to answer that -- the rest of that question.

MR. JAMMAL: Ramzi Jammal, for the record. I think I'm going to disagree on the fact that there is moving targets with respect to the comment made on meeting the safety objectives.

In our regulation we establish a minimum requirement that the applicant has to provide and then, so there is a baseline by which we take off from, and then the applicant must respond to our requirements.

For example, section 3 of Nuclear

Substance regulation that the applicant must provide all the information necessary for us to render a decision and provide you with a recommendation.

So, we take a baseline element by which it combines prescriptive requirement and objective requirement. The prescriptive requirement would be, for example, ascertaining the dose for the worker, the shielding design, the elements that will develop the safety case so that the licensee is establishing the safety case based on a foundation that is based on science.

Where we become very specific in meeting the objectives, the safety objective is the specificity of the operations and that's where we will have the -- based on the operation itself, then there is a requirement in order to ensure that safety is maintained at all times.

So, if for example, an SMR versus a nuclear power plant, there are some basic elements that will never deviate from from a safety requirement and then the specificity for the operation based on the site itself, the training of the individuals, how the operations will be conducted, that is where it will be performance based rather than prescriptive.

So, we do not certify, for example, a design and the design does not change over the period of time. In specific, our nuclear power plants we can speak

of the continuous enhancement over the years will require our licensee to review the safety case on a periodic basis and update in order to always meet the safety standards -- the new safety standards.

That is the objective that we strive for versus other regulators, they certify the design and there are no changes to the design.

So, that's the difference with respect to performance objective to meet the safety. We are always continuous enhancement versus prescriptive bounding blocked element.

Yesterday it was discussed in the ROR for DNSR with respect to consistency, how it's being applied, regulatory OPEX experience within the organization itself and we always take in consideration what we know nationally, internationally and we establish our requirements as what I'm going to call as minimum common denominator that no one will not meet and then we move on to the specificity based on the operations.

MEMBER DEMETER: Thank you. That was helpful. I was interested in, like you've got your minimal requirements and then you've got all your licences. I just note if there was a mechanism that you review how far above and beyond those minimal requirements and that your licence applicants go and how heterogeneous that is.

So, some will set the bar here and some will set the bar here. I mean, the minimal is here, but how much variability is there where they set the bar and does that sort of drive future practice for those that set the bar here? If one applicant sets the bar here based on their performance and the inspector really likes that, does that drive the bar to the other guy who is still above of the minimum, that's sort of -- is there a way to review that heterogeneity in performance based?

MR. JAMMAL: Ramzi Jammal, for the record. One more time is, if you -- let's start with the highest risk facilities. We establish Licence Condition Handbook. In the Licence Condition Handbook we look at the compliance certification criteria, that is prescriptive that the applicant -- sorry, not the applicant, but the operator must meet at all times.

And then, within the Licence Condition Handbook we insert, looking at the best available technology and the best practices. So, we always put in place so that the licensees are always striving to the best practices, taking consideration the impact on the overall safety of the operations.

So, yes, there is heterogeneity between facilities, but the endpoint is the safety. So, no one would be allowed to operate without maintaining at minimum

the safety requirements.

I'm going to repeat what I just said before. If two facilities of the same kind, one has a higher bar, let's put it at the higher bar, we always bring all the others to the same bar and that's why we do the cross-comparison on the annual basis for the NPP Report by which we give the rating between fully satisfactory, satisfactory. So, everyone has to meet that minimum to be in compliance with the regulation.

If there are best practices being introduced, we recommend and encourage the licensee to do so and that's why the improvement plan, the licensee takes that into consideration.

So, we've got multiple regulatory mechanisms in place, the periodic safety review is one, the other one is probabilistic safety assessment by which the licensees establish the safety goals and the safety targets, so then they are always achieving continuous enhancement.

MEMBER DEMETER: Thanks. That does answer my question. It's sort of regression -- it's not regression to the lowest bar, it's regression to the highest bar.

Thank you.

THE PRESIDENT: Question around, how do

you measure your effectiveness in bringing about greater clarity and you know, the REGDOCs are more streamlined, more current, more accessible? How do you assess that on an ongoing basis?

MR. TORRIE: Brian Torrie, for the record. We've had on our plan for a while now to do some kind of a survey evaluation of the status of our regulatory clarity. It's been put off because we were waiting to the point where we finished up the main tranche of the 58 or so REGDOCs.

So, I would say we haven't formally done that, although we have I guess more general feedback. Licensees are always willing to provide feedback on the clarity issues, so -- and you see that when the REGDOCs are presented to the Commission. So we get that kind of feedback fairly regularly.

And then, we also have other groups who we participate in such as the CSA group where licensees and others are involved, and then the COG group as well, and then some of the general outreach we have with the public or Indigenous groups, we'll have questions raised there.

But I would say at this point we haven't done a formal survey on that effectiveness, but that is in our plan.

THE PRESIDENT: Thank you.

Dr. Lacroix?

MEMBER LACROIX: My question follows that of Dr. Demeter's. I'm curious, would the regulatory system adopted by CNSC work equally well in a country where you have 50 or 60 different nuclear operators?

MR. TORRIE: I would think it would work. We deal with a lot of -- like we have over 3,000 licensees, so it's pretty varied that way.

But I think I'll refer that to Mr. Jammal to answer.

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

Dr Lacroix, pourriez-vous répéter la dernière portion de votre question?

MEMBER LACROIX: Yes. The last portion of my question is that we have a system that is implemented in Canada and we're dealing with few nuclear operators, you know, OPG, NB Power and so I'm just -- and Bruce Power. I'm just curious about, would it function equally well -- as well in a country where we have 50 different nuclear operators?

MR. JAMMAL: Ramzi Jammal, for the record. From the hypothetical perspective the answer is yes. So, the uniqueness of Canada we have the CANDU technology as the driver and then we have reactors that are owned by the

provincial governments and then the operators. Bruce Power is a separate entity, a private operator versus OPG which is a stakeholder for the Province of Ontario and so is the NB Power.

From the prescriptive end the objective based, the system does work and the difference in technology let it be our operators has been a proven around the world to function because once we do the review of the contracting parties under the Convention on Nuclear Safety, the treaties, it poses the challenge of the new technology and then the continuous enhancement and then the exchange of information adds the capability to enhance regulatory requirements.

With all honesty, no system is a perfect system. What really every regulator should put in place is no compromise to safety and then hold the operators accountable for safety. That is where the challenge is going to be at all times. Different technology will cause different regulatory requirements, but the regulator will have to be an informed regulator.

I hope I am answering your question, but globally the challenge does exist and then that's why there is the periodic review under the legal treaties in order to make sure that safety is not being compromised.

MR. TORRIE: Yes. Brian Torrie, for the

record. Just to add I think to that answer.

If you look at the key principles of our regulatory framework that ensures like robust strong governance, clarity, public participation, there should be no reason why at a larger scale applying those principles it wouldn't work, it would just probably require more resources. But if you stick to those as your key criteria for being effective, it should work.

THE PRESIDENT: Ms Penney...?

MEMBER PENNEY: Thanks. A two-part question on Bill 69.

One is we have, or staff has before it right now three CEAA 2012 EAs by CNL and I just want to confirm that they are going to continue under CEAA 2012, they are not going to be subject to the new Act.

And the second part is please tell me a little bit more about this early planning stage and what public consultation would be involved in it and how it is going to help it be more efficient and effective.

MR. TORRIE: Brian Torrie, for the record. I will ask Ms Cianci to answer that question.

MS CIANCI: Candida Cianci, for the record.

So to answer your first question, currently in the Bill there is a transition provision that

indicates for those environmental assessments that have commenced under CEAA 2012 that those will continue as such. So there is a transition provision, so that is our expectation. We anticipate that those projects will continue under CEAA 2012.

And then to answer your second question about the early planning phase, so, as Mr. Torrie indicated before, it is to in hopes gain efficiencies in the process. So it is definitely to be done in consultation and collaboration with the public and Indigenous groups and it is envisioned that there will be engagement plans that are established and developed during that phase that would iron out how would the engagement and consultation take place for the remainder of the process. And then there are opportunities for the public and Indigenous groups to participate in developing that, but it is also -- as Mr. Torrie indicated before, it is an opportunity for them to raise issues early on about how they feel about the project and what their concerns might be about the project and there is an onus on the proponent during that phase to indicate how they will address those concerns. So the focus will be to try and address as early as possible in the process those issues rather than getting to the later stages of the process. So that is the vision for that phase.

MEMBER PENNEY: What initiates that process, the early planning process?

MS CIANCI: So it would be I believe an initial project description that the impact assessment agency would determine in all likelihood it would require an impact assessment. That is also the purpose of that phase, as well as to determine what type of impact assessment will be required. And in the case for CNSC, that would be the point where early work could be done in terms of what would the process look like, start some dialogue on the panel appointment process, as well as drafting of terms of reference for the panel. So it is all to sort of take place as part of that early planning phase.

MEMBER PENNEY: And when would the CNSC receive an application for the site prep? Is that before that early planning process?

MS CIANCI: Candida Cianci, for the record.

So those are sort of the things that we want to iron out further on. I can just give you a little bit of experience of how we have done it in the past.

So given that we sort of -- CNSC typically gets indication from potential licensees early on, we might be aware of a potential project, so we are going to be in dialogue with the Canadian Environmental Assessment Agency

about how do we notify them early on of a potential project and bring them into the fold of having those early discussions with licensees. We do have discussions of what are the expectations, what are the requirements, so there might be a scenario where we might receive an application, but we wouldn't do it without letting CEAA know in terms of getting the impact assessment process started. So that is actually one particular element that we do want to iron out in terms of the process.

MR. ELDER: Just if I could add. Peter Elder, for the record.

One of the purposes of adding this early planning phase was a lot of the recommendations that they got from the panel that the government formed to look at this one was a way to make sure that policy decisions were brought to the fore early in the process and act to get a decision from a policy perspective on things like whether this project was in the national interest or not very early on in the process. So that was, you know, as well as identifying the issues, but also having the opportunity for the government to weigh in on policy considerations very early in the process and not have those coming out during the detailed assessment part.

MEMBER PENNEY: Thank you.

THE PRESIDENT: Mr. Berube...?

MEMBER BERUBE: Obviously, we are very interested about this Bill, so I have a question too. In terms of relicensing requirements, because new categories are being added underneath the IAEA, in relicensing terms is that going to trigger a need for a new IAEA since they have not been assessed or is there a grandfather clause that keeps these sites protected?

MS CIANCI: Candida Cianci, for the record.

So the current project list doesn't have relicensing, as you are indicating, and that was envisioned that it would just focus on major projects that had potential for significant adverse environmental effects. So the types of provisions that you will see there for nuclear projects are developments of new nuclear reactors, new uranium mines and mills, and then expansions of those types of facilities at a certain threshold of 50 percent. So that is not on there, and the Government of Canada in terms of revising this project list has indicated that they want to keep to that focus of major projects that would only result in significant environmental effects. So I don't know, we will see what the project looks like when it comes out in the fall, but if it is to keep with that focus we wouldn't anticipate that it would be on the list.

THE PRESIDENT: So clearly a lot of

interest by the Commission on Bill C-69 regulation, so you may want to think about when you want to come back, at what milestone to give a more detailed update on what it's about.

Dr. Demeter...?

MEMBER DEMETER: The question may be a bit out of scope, so just tell me, but the new Bill that's coming in will have an impact on CNSC and I wanted to get a sense, although they are not here to respond, for the Nuclear Waste Management Organization, depending where they are, what impact will it have? Will it mean that when they finally get to their selected community they will have to go through all this potentially? Do you have a sense of how -- because I know at the end of the day we are going to be part of the regulator for that, but they are a separate organization, but sort of does it have an impact on timelines and their process?

MR. ELDER: Peter Elder, for the record.

I will just say it's hard to speculate too much on what is going to happen. We haven't seen the final version of the Bill and certainly the assumption the NWMO has been working on all along is that there will be a very thorough environmental assessment around their project. So I don't think it would change their timelines' expectations too much, but we will come back to you when we have a

little more clarity around what it is. So the Bill is still in the Senate right now, it can be changed in the Senate, but we will come back when we have a little more clarity around these questions. But certainly for NWMO, they have been working for many years on some of the items early on, they have been doing that early engagement, all that early phase they actually were mandated to do by the *Nuclear Fuel Waste Act* 10 years ago or 15 years ago.

THE PRESIDENT: So given that we have some of our nuclear power plant licensees here or on the phone, I think it would be good to just get some feedback from them on what staff has presented about regulatory framework and any thoughts they have. So why don't we start with Bruce Power since you are in the room, and then OPG and Point Lepreau after.

MR. BURTON: Maury Burton, Bruce Power, for the record.

As far as what CNSC has presented, from a licensee perspective we are quite happy with the regulatory framework and the way we are consulted on it. There are a few areas that we would like more consultation on and more input, earlier consultation, but for the most part the CNSC staff is very responsive to our consultation questions and comments. So I would say that it's a good process and for the most part we are happy with the way things go.

Like I said, we don't always agree, but that is the way regulatory frameworks work, the regulator is going to set some standards for us and we are going to try to get into a compromise situation in some cases, in other cases we are going to have to live with the standards that are set.

I believe it is a fair process, I believe it is one of the better processes in the world. If you look at the way we do things here, we are always trying to bring in the most modern standards and update our standards, whereas other countries, they use the standards from the time that the actual reactors were licensed. So they use those standards right through their operating period, which I think our method is better because we are always looking at that continual improvement.

THE PRESIDENT: Thank you. That's good to hear.

And then as far as the projected timeline to get this first round done by 2020, does that pose any concerns or issues? Is this something you are so eagerly looking forward to?

MR. BURTON: Maury Burton, for the record.

We are quite happy with the timeline. We were actually quite concerned with the push to get it done this year because with the number of regulatory documents

and the consultation phase, it's generally the same staff that are looking at a number of these. So there was quite a resource drain. I think Mr. Torrie kind of mentioned the impact of all these things going through and -- I can't recall the term he used -- consultation fatigue, yes, that was the term. And we were feeling that because we were seeing up to 10 of these a year, which it's a significant effort to get through some of these, particularly the more technical ones that are longer. And if you look at some of the newer ones where we are still looking at implementation, such as the drug and alcohol testing, there is a lot of work that needs to be done to get those regimes in place.

THE PRESIDENT: Thank you.

OPG, I don't know if you are still on the line. Anyone on? No.

And Point Lepreau? Okay.

Dr. Lacroix...?

MEMBER LACROIX: Yes. Thank you.

If we could go back to Slide 19, please. The question is still on Bill C-69, I'm sorry for that. The left frame, the last bullet, it says, "Cabinet to make impact assessment decisions on CNSC projects". Could this additional layer of decision-making erode or challenge the authority of CNSC?

MR. TORRIE: Brian Torrie, for the record.

No, because the Commission already has its authority under the NSCA to make the licensing decision, and legislatively, Bill C-69, if it becomes the legislation, will provide the authority for the impact assessment decision to the government. So there is no -- the authorities will be pretty clear in the legislation.

MEMBER LACROIX: And what about the decision-making process itself, the regulatory process, would it be affected by this action?

MR. TORRIE: Brian Torrie, for the record.

No, because the plan, as we were discussing earlier, is to have an integrated approach to get to that recommendation that goes to Cabinet. That would involve the CNSC expertise, CNSC participation in the integrated panel review process, and as I said, legislatively the government or Cabinet makes that impact assessment decision and then it would come back to the Commission to make the licensing decision and to continue on with the lifecycle of the project, to regulate it.

THE PRESIDENT: Ms Penney...?

MEMBER PENNEY: It's too good not to ask a question about.

--- Laughter / Rires

MEMBER PENNEY: So does that mean that

there would be from this joint panel a recommendation document coming back to us as the Commission to make the licensing decision or has that been sorted?

MR. TORRIE: Brian Torrie, for the record.

I think, as we were discussing earlier, we are still working on how the integrated process will work, but generally the idea, if you follow some of the other models we have already had, is that the review panel that would function for the purposes of the licensing review would be involved in the impact assessment recommendation and then take it back to make the licensing decision following the impact assessment decision.

MS CIANCI: It's Candida Cianci, for the record. If I could just complement that answer.

The way that the Bill is written is that there would be a report that would be prepared for the panel with the recommendations, but it has to cover both impact assessment and all of the licensing matters that were heard. So once there would be an IA decision, the panel would then have that report to inform their licensing decision.

MEMBER PENNEY: Who is preparing that report?

MS CIANCI: I believe it's the panel.

MR. TORRIE: Brian Torrie, for the record.

Maybe just to further comment on Bill C-69 and the impact assessment process. Based on like my own experience with environmental assessment and other projects in other departments, there are a lot of variables involved in, as I was saying earlier, any kind of process like that and I think the best CNSC can do -- and in fact I would say we are probably more prepared than most other federal departments because we have a past relationship with CEAA that will become the Impact Assessment Agency, so we don't necessarily are that worried about developing an integrated process that way. We have our own internal licensing process that prepares us well for any project. When you look at things like vendor design reviews and these things where we are looking at technology, I think that is way ahead of a lot of the rest of the federal government. And then we have our own science here, the staff at the Commission that are quite strong and cover off all areas of expertise, which is somewhat unique compared to a lot of other federal regulators as well. So in that sense we are well prepared for whatever the Bill brings forward.

THE PRESIDENT: Okay. So no more questions on Bill C-69. We will save it so that we don't force staff to speculate on it.

Mr. Berube...?

MEMBER BERUBE: So, you know, obviously

you are spending a lot of time rewriting documentation right now in order to get this REGDOC standards done by 2020, but I am curious about the evergreen cycle that you are using right now, because obviously you are in the process of modifying existing documentation for the new REGDOC framework for completion, but the evergreen cycle itself, because it is cyclical, could you describe to me how you actually go about implementing that?

MR. TORRIE: Brian Torrie, for the record.

So if I understand your question correctly, you are saying what does evergreen mean in terms of how we update documents?

MEMBER BERUBE: Absolutely. How do you actually implement evergreen within the organization?

MR. TORRIE: Okay. I am going to ask Ms Forrest to provide a full answer on that, but hopefully I don't steal her thunder here.

But essentially it means -- and she could probably give a good example. So if we brought a regulatory document forward to the Commission and they approved it and within a few months we found out there was something that needed to be adjusted, we wouldn't wait until the end of the cycle to adjust it, we would go in and try and fix it right away. So in that way it's kind of evergreen. If there is an improvement to be made, we can

make it as long as it is fairly straightforward.

I will ask Ms Forrest to expand on that.

MS FORREST: Lynn Forrest, for the record. Yes, I would like to elaborate.

We over the years have been building this regulatory framework structure with the view of implementing a five-year review cycle. We talk about having a five-year review cycle. We are not there yet because of the fact that we have been building the thing. So that is the overall objective. Right now we are at the point where we are scheduling the five-year review for all projects, but they are always open to be -- we are always open to opening them sooner. I just got an email yesterday from one of the directors in an area saying that he needs to open his document now. Operating experience that they have been through working on what they put out a couple of years ago has indicated that it is a good time to start policy analysis now because there are challenges with the implementation. So, fair enough, our Reg Framework Group and Steering Committee will look at that and probably bring that forward.

At the same time, I would like to say that when we do our cyclical reviews going forward we are going to have some challenges with -- we have issued different volumes of different -- some REGDOCs have several volumes

and one of the challenges going forward will be to see if those volumes can all be put on the same cycle as opposed to the different cycle they were put on when they were produced.

And finally, if a document is open for review as part of the cyclical review or brought forward because there is a pressing issue, it doesn't always mean that we will amend the document, it is just a review.

THE PRESIDENT: Dr. Demeter...?

A question on the GBA+ and how you are actually operationalizing it. So can you elaborate on -- I don't know, do you guys get some training on this -- what good GBA+ analysis really looks like and maybe give us some specific examples that this has now introduced in our REGDOCs which previously we may not have considered?

MR. TORRIE: Brian Torrie, for the record. I will ask Ms Forrest to provide an answer on that.

MS FORREST: Lynn Forrest, for the record.

The first thing I will underline is that there is a big "plus" in the GBA+. People always shorten it to say gender-based analysis, but it includes age, sexual orientation, religion, mental or physical disability. So I just wanted to start with that statement.

In terms of our regulations, you've seen some examples yourself in terms of the *Radiation Protection*

Regulations, where we took a gender lens to look at the impacts of radiation protection on pregnant and breastfeeding women -- and we thank the Commission for some input recently on that -- to make sure that there are provisions in place to protect women in that case.

Some of the other things I can see where it might come forward is in some of the fitness for duty aspects of regulatory documents and regulations where you would want to make sure that in fitness for duty, setting the testing requirements, et cetera, that you have considered the age factors and the gender factors and other things in terms of setting the physical fitness requirements for certain people. You see that in the fire department as well, you have seen that over the years where women were excluded at one point or there is a certain age where it's assumed that you are not going to be fit enough to work and that is the kind of consideration you would want to take into account.

Another thing that you would take into account, and we have heard it from the licensees as well, is the personal protective equipment, to make sure that it is adaptable to people of different shapes and sizes, whether they be men or women.

I think that going forward for each of our -- actually, I want to underline too that we don't have

to implement it for REGDOCs, but we went to the Reg Framework Steering Committee, which is a really solid oversight committee of the regulatory framework, and we took a decision that we would as much as possible bring the GBA+ lens into the REGDOCs as well as the regulations because it was the right thing to do. So I think overall we want to assure that the regulations and the REGDOCs consider all the potential ranges of possibilities and make sure that they are set appropriately and that we don't introduce any unintended consequences for certain sectors of the population.

Does that answer your question? Is there a follow-up?

THE PRESIDENT: So the one part was -- I mean one can use common wisdom to address it, but did you get training, are there any tools provided?

MS FORREST: So yes, there is training. I would like to turn the question to Nathalie Skov to answer that question.

MS SKOV: Nathalie Skov, for the record.

So in terms of training for GBA+, we have been involved with the Canada School of Public Service just recently to help them set their learning objectives to build a course for the entire government. We weren't the only organization who was represented, but we were one of

the only regulators, so we brought our unique perspective and our own needs to the table. So this course is being piloted in a couple of weeks actually and we will take part in that pilot and bring some feedback as well.

We have also taken training from the Status of Women Canada, who have built really extensive training on GBA+.

We are currently working with various factions of the organization of the CNSC to build capacity and to look at all aspects of GBA+ in what we do.

THE PRESIDENT: Thank you.

And then more a comment on something and maybe share it with my fellow Commission Members, something that got passed on to me by one of our licensees and this is probably an unintended consequence, is around our certification requirements for shift managers where if you have passed an exam you can get timed out if you don't move to the next one and it really impacts women who are in the childbearing age and leave for family matters and they can't continue with the program. So again, when we do this GBA+ lens, even with what we already have in place, I think it will show maybe some other areas we may want to revisit. Thank you.

Dr. Lacroix...? Ms Penney...? Mr. Berube...?

MEMBER BERUBE: Actually, I was really impressed that you are actually doing a comparative analysis between your group and other agencies, both nationally and internationally. I'm just curious, you know, why did you select the agencies you selected as a base comparison? What was the rationale for that?

MR. TORRIE: Brian Torrie, for the record.

We picked -- actually, there is I think more -- we actually picked more than are mentioned in the presentation, but we picked those ones for comparisons because those are the other ones people are most familiar with. That's generally why we picked them. And as I think I talked about in the presentation, the different contexts for how different countries regulate not just the nuclear industry but regulate in general can make comparisons difficult, so we tried to pick some that were sort of culturally similar that way as well.

I would also add that we have a lot -- we could do a lot more work in terms of comparisons. The information presented in the presentation was kind of an overview we had, but given some of the comments such as looking more closely say at Health Canada, that's some of the stuff we are going to follow up on.

MS FORREST: Lynn Forrest, for the record. I would just like to add to that.

We are a member domestically, we are a member, an active member of the community of federal regulators, which is basically a government-wide organization that shares best practices amongst all the different regulators, develops training programs and also coordinates best practices and improvements throughout the government. And in choosing the National Energy Board and Transport Canada and CFIA we were very closely -- we thought we were similar to them in some ways. Transport Canada for instance has moved from prescriptive for the railways to a safety management system type of thing and they came in and helped us, and that's some of our colleagues in the CFR, notwithstanding Health Canada, who are champion of the CFR.

MEMBER BERUBE: And just in that line of questioning, because you are doing comparative analysis this way, subjectively -- I know it's very difficult to do this subjectively -- where do you think you rank in terms of overall documentation and control in that area?

MR. TORRIE: Brian Torrie, for the record.

Well, I think the CNSC is pretty proud of the regulatory framework, so if we are not the best, we are probably near the best, but I think as we noted in the presentation there are still other areas we can improve on. You know, we were talking earlier about GBA+ and getting

some of the concerns coming forward and, you know, consultation is kind of an evolving practice where it used to be you sent out emails and you could reach everybody that way, but anybody with a 15-year-old at home knows they don't even follow email anymore. So you have to look at new ways of reaching out and for us that is I think our current challenge if we want to continue to be at the forefront, is look at those new ways of reaching out and targeting particular groups that have a particular interest, because there is just so much information out there and so much consultation going on. That's our challenge.

MS FORREST: Lynn Forrest.

I would just like to add that Mr. Jammal is at the back, but we are participating on the international scene. We have the conventions and the reviews that go on internationally, and the reg framework is always part of those reviews and we always make sure that the feedback we get from peer reviews internationally is part of the improvement plan that is implemented after we come back from those missions.

THE PRESIDENT: Dr. Demeter...? Okay. Well, thank you. Thank you very much. Thank you for all that great work and good luck with the 2020 target date. Thank you.

We will now take a break and resume at 11 o'clock. Thank you.

--- Upon recessing at 10:43 a.m. /
Suspension à 10 h 43
--- Upon resuming at 11:01 a.m. /
Reprise à 11 h 01

THE PRESIDENT: Good morning. The next item is the CNSC Regulatory Safety Oversight Culture Assessment, as outlined in CMDs 18-M40 and 18-M40.A. I will turn the floor to CNSC staff for their presentation.

Mr. Jammal, the floor is yours.

CMD 18-M40/18-M40.A
Oral presentation by CNSC staff

M. JAMMAL : Bonjour, Madame la Présidente et membres de la Commission.

Pour l'enregistrement, mon nom est Ramzi Jammal. Je suis le premier vice-président et chef de la réglementation des opérations au sein de la Commission canadienne de sûreté nucléaire. Je suis aussi le champion de la culture de sûreté.

I will switch to English. No need for the

headphones.

So as the safety culture champion, I would like to start by stating that safety culture is not a sprint, it is not a one-off activity, it is a long journey. This long journey will be filled with continuous improvement and starting with the safety culture assessment they are never easy and rarely any organization gets it 100 percent from the get-go.

So the CNSC is no different. We have a solid start, we conducted our self-assessment, and the journey with respect to the safety culture starts with our fundamental principle that nuclear safety is our overriding priority and will not be compromised.

The second point, I would like to reiterate the fact that embracing and maintaining a healthy Regulatory Safety Oversight Culture is not easy and takes time, but we are not afraid of continuous improvement.

The CNSC, as you can see, has invested a lot of effort into its first self-assessment and we will continue to build on these efforts. We will do it through the implementation of the Management Action Plan and other initiatives.

The CNSC will continue to be proactive in ensuring that the CNSC is a safe environment for staff to raise issues and that mechanisms are in place to do so.

So with this introduction, I will turn the presentation over to Mr. Hugh Robertson to introduce our colleagues and go through the presentation. Thank you.

MR. ROBERTSON: Good morning, Madam President and Members of the Commission.

My name is Hugh Robertson and I am the Director General of the Directorate of Regulatory Improvement and Major Projects Management at the CNSC.

With me today are Marie-Pierre Grondin, Director of the Internal Quality Management Division; Eman Ibrahim, also a Project Officer in the Internal Quality Management Division; Ross Richardson, Director of the Human and Organizational Performance Division; as well as a number of subject matter experts.

We also have members of the Nuclear Regulatory Group of the Professional Institute of the Public Service of Canada in attendance today.

In addition, we have Dr. Mark Fleming, Canadian National Professor of Safety Culture at Saint Mary's University, an independent expert on safety culture who has assisted us throughout this process.

This CNSC staff presentation is a follow-up from a Commission presentation delivered in August 2016, in CMD 16-M46, regarding the Technical Review of Probabilistic Safety Assessment Issues. During this

presentation the Commission directed staff to, and I quote, "implement a mechanism to formally assess CNSC staff safety culture as soon as practicable".

This report speaks to the findings of our assessment of the CNSC's Regulatory Safety Oversight Culture and it is the first time we have undertaken this kind of assessment.

This work was about understanding the current values, beliefs and behaviours of our organization with respect to safety, which is at the core of our mandate.

The CNSC is one of only a few nuclear regulators in the world to have undertaken a comprehensive assessment of its own safety oversight culture. The purpose of today's presentation is to share CNSC's journey to assess, promote, embrace and maintain a healthy Regulatory Safety Oversight Culture and answer any questions that the Commission may have.

Today's presentation begins with background information which speaks to what is a Regulatory Safety Oversight Culture, the research and benchmarking conducted, results of the Regulatory Safety Oversight Culture assessment, the recommendations and management responses resulting from the assessment, the detailed management action plan, and finally we will close with a

conclusion and next steps.

I will now turn the presentation over to Ms Marie-Pierre Grondin.

MME GRONDIN : Merci, M. Robertson.

Madame la Présidente, membres de la Commission, je suis Marie-Pierre Grondin, directrice de la Division de la gestion interne de la qualité.

Il est important de prendre note que notre périple vers une culture de surveillance de la sûreté règlementaire saine a débuté bien avant que la Commission ne dirige les employées de la CCSN a en effectué une évaluation. Depuis plusieurs années, des mesures ont été mises en place tant à l'interne que sur la scène internationale.

For example, in 2013 the CNSC created the Regulatory Safety Oversight Culture Working Group in order to create a more structured program for safety culture. Other internal measures included the creation of the Scientific Integrity Working Group and the integration of safety culture into our CNSC management system. These are just a few examples, while more information on proactive measures will be discussed further during this presentation.

As for the international activities, CNSC staff contributed to the Nuclear Energy Agency, or NEA,

document on "The Safety Culture of an Effective Nuclear Regulatory Body". To this day, CNSC staff continue to take an active role in the NEA and International Atomic Energy Agency, or IAEA, safety culture working groups. We also collaborate with other safety culture experts worldwide.

Now that I have shared some information on the emergence of the CNSC's efforts towards creating a healthy safety culture, I will discuss some of the factors that triggered CNSC's Regulatory Safety Oversight Culture assessment.

You might recall the anonymous letter received by the former CNSC President in May 2016. The alleged concerns in the anonymous letter were largely related to probabilistic safety assessment and that the Commission was not given all of the required information for the licensing decisions for Bruce and Darlington.

In August 2016, a technical expert presented a technical review of the letter's allegations to the Commission. Although the Commission concluded that the issues raised in the anonymous letter were not a safety concern, there were a number of follow-up actions directed by the Commission, one of which was for staff to implement a mechanism to formally assess CNSC staff safety culture as soon as practicable. CNSC staff undertook this task with the advice and guidance of Dr. Mark Fleming, a

world-renowned expert in the field of safety culture.

This slide illustrates our approach to assessing, enhancing and maintaining a healthy Regulatory Safety Oversight Culture. We will discuss each one of these items in more detail in the remainder of the presentation.

I would like to highlight that we are committed to continuous improvement through multiple proactive initiatives and periodic assessments.

As part of our efforts to prepare for this assessment we conducted research and benchmarking. The next few slides highlight the Regulatory Safety Oversight Culture definition, including the difference between licensee and Regulatory Safety Oversight Culture, ongoing initiatives, safety culture principles and attributes, as well as the assessment methodology.

Over the assessment period, we heard a number of people that perceive safety culture as simply occupational hazards such as slips, trips and falls, but it is far broader than that. Regulatory Safety Oversight Culture can be described as "Our shared attitudes, values and behaviours that influence how we fulfill our regulatory responsibilities."

When we speak of Regulatory Safety Oversight Culture, we refer to the safety culture of the

regulator. While primary responsibility for safety rests with the licensee, the regulator plays an important role in providing independent verification that the licensee is fulfilling its obligations.

The Fukushima Daiichi accident also was an important milestone in highlighting the importance of a healthy Regulatory Safety Oversight Culture. The IAEA report on the Fukushima Daiichi accident noted that the lack of a strong regulatory oversight safety culture was a contributing factor and that it is essential that regulatory bodies have a strong safety culture. The CNSC has taken that direction very seriously.

As mentioned, over the past few years we have undertaken a number of initiatives to strengthen CNSC's Regulatory Safety Oversight Culture.

It is important for the CNSC to monitor the effectiveness of new and ongoing initiatives and take appropriate action when required. As such, the CNSC regularly seeks staff and management perceptions by conducting "Taking the Pulse" surveys to obtain feedback on awareness and progress. In addition, we take part in the Public Service Employee Survey and the Association of Professional Executives of the Public Service of Canada Executive Work and Health Survey.

Since 2014, CNSC has conducted regular

safety oversight culture town hall meetings to engage employees in an ongoing open dialogue.

The Regulatory Safety Oversight Culture Working Group is comprised of staff from across the organization, including union representation. The working group supports the CNSC's Regulatory Safety Oversight Culture champion.

The development and implementation of key behavioural competencies and key leadership competencies for managers are a means of ensuring the development of competencies at all levels. Other initiatives which are explained in more detail in the assessment report include the knowledge management initiative, the Capabilities for Nuclear Safety project, and the regulatory operations training program.

The Scientific Integrity Working Group is responsible for multiple internal initiatives that help in building greater engagement and transparency in our decision-making process. The working group, co-chaired by a CNSC manager and an appointed union representative, developed several policies, such as:

- The Policy on Science in a Regulatory Environment, which provides a framework to ensure that scientific and ethical standards are

applied in providing scientific advice for the use of regulatory decisions and supporting scientific integrity in a regulatory environment. The policy also established a new Chief Science Officer role.

- The Open Door Policy that empowers CNSC staff to raise their concerns with any managers at any level without the fear of reprisal.
- The Non-concurrence Process, which provides a clear pathway for staff to seek resolution of their differences of professional opinion regarding scientific and regulatory decision-making when reasonable attempts through existing work processes have failed.
- The Differences of Professional Opinion Process is a more formal mechanism that has been in place for staff to bring forward and resolve any differences of professional opinion regarding regulatory

positions established during the regulatory operations.

In addition, we have implemented CNSC's two-key or multi-key system to engage relevant staff in developing a better-informed decision-making process and to help create a psychologically safe space for open discussion.

I will now focus on the background material and references that directly influenced our Regulatory Safety Oversight Culture assessment.

The NEA green booklet on "The Safety Culture of an Effective Nuclear Regulatory Body," published in 2016, describes five principles and associated attributes that underpin and support the safety culture of an effective nuclear regulatory body. According to the NEA, each of these principles and attributes are a necessary feature for a healthy safety culture, and it is the combination of these characteristics that leads to a healthy safety culture within regulatory bodies.

The NEA has encouraged all nuclear regulatory bodies to use the green booklet as a framework against which they can carry out their own assessment and benchmarking, which is exactly what we have done at the CNSC. You will note that the assessment report findings are structured based on these five principles and the

report identifies CNSC strengths and areas for improvement for each principles.

Regulatory Safety Oversight Culture assessments can be carried out using a variety of quantitative and qualitative methods. In this case, we chose document reviews, which reveal an organization's intentions, plans, and policies; questionnaires, which provide a means of acquiring safety oversight culture perceptions from a broad range of individuals; focus groups, which consisted of a small number of staff to allow for the exploration of facts, stories, opinions, experiences, and behaviours.

I will now turn the presentation over to Ms Eman Ibrahim, who will describe the assessment methodology and share the results of the Regulatory Safety Oversight Culture assessment.

MS IBRAHIM: Thank you, Ms Grondin.

Madam President and Members of the Commission, for the record, my name is Eman Ibrahim and I'm a senior project officer in the Internal Quality Management Division.

I would like to provide a high-level overview of the Regulatory Safety Oversight Culture methodology. The methodology for the assessment was developed by CNSC staff with the support from our external

expert, Dr. Mark Fleming.

The assessment methodology was developed to align with the previously noted IAEA "Safety Reports Series No. 83: Performing Safety Culture Self-Assessments." The assessment used a multi-method approach to gather and analyze data from document reviews, focus group discussions, and the administration of a questionnaire on safety oversight culture perceptions. We reviewed the results from previous staff surveys along with feedback from safety culture town hall sessions.

As a result of this preliminary review and with the advice of Dr. Mark Fleming, we identified six themes for further exploration, namely, psychological safety, leadership, collaboration and communication, questioning attitude, decision-making, and continuous learning and improvement.

Ten focus group meetings were conducted, eight with staff and two with management. A total of 117 focus group participants were selected from across the organization, including site and regional offices, using a random sampling technique that included representation from varied work areas and levels of seniority.

A questionnaire with 30 questions on perceptions of safety oversight culture was administered at the start of each focus group meeting, followed by a

theme-by-theme discussion. All of the data collected from all methods was analyzed and the findings summarized in the assessment report.

CNSC staff conducted its Regulatory Safety Oversight Culture assessment with the help of external experts, who provided input throughout the process, including the preparation of the assessment report, which was completed in February of 2018.

The report was communicated to staff by the president, and staff were encouraged to provide their feedback. The report was further discussed at a managers' forum in March of 2018, a safety culture town hall meeting led by the President and Executive Vice-President and Chief Regulatory Operations Officer in April of 2018, and various divisional meetings upon request.

The following are some of the strengths identified in the assessment. I will highlight a few for the purpose of this presentation.

Overall, CNSC staff perceive safety as the priority when decisions are made, and staff understand the role they play in a healthy safety oversight culture. Staff feel empowered to exchange views and feel comfortable using the suite of existing mechanisms to do so, such mechanisms include, but are not limited to, the Open Door Policy, the Non-concurrence Process, and the Differences of

Professional Opinion Process.

CNSC staff value a holistic approach to safety. This is apparent as staff possess a willingness to collaborate and share expertise across the organization with groups and teams outside of their directorate and branches. Staff believe they receive the essential training and believe they possess the required competencies to fulfill their daily activities.

Along with strengths, the assessment identified areas for improvement. Again, I will highlight a few for the purpose of this presentation.

CNSC staff expressed a need to clearly communicate the rationale for decisions made by line management in order to improve the flow of information to staff. Staff also feel that a more questioning attitude should be encouraged in order to seek different perspectives and challenge assumptions when decisions are made.

Staff feel that improvements can be made where it relates to timeliness of management decision-making; however, that concern is not applicable to the Commission's decision-making.

CNSC staff believe that a common understanding of a healthy Regulatory Safety Oversight Culture is needed to continue to strength our culture.

Staff also believe that it is imperative to manage, capture, and transfer knowledge held by long-time staff to the new generation prior to their departure.

It is apparent from the analysis of the results that there are differences in staff perceptions; however, all feedback was considered and included as part of the analysis.

I will now turn the presentation back over to Ms Marie-Pierre Grondin, who will talk about the assessment recommendations and management response.

MME GRONDIN : Merci, Madame Ibrahim.

Pour le verbatim, je suis Marie-Pierre Grondin. Je vais maintenant discuter des cinq recommandations qui résultent du rapport. Je vais également mettre en lumière plusieurs mesures ayant déjà été mises en place par les employés et les membres de la gestion de la CCSN.

The first recommendation pertains to ongoing coaching and mentoring. This recommendation aims to ensure that leaders and managers, at all levels of the organization, are conscious of the influence and control they have in helping to create a healthy environment.

The CNSC acknowledges the importance of its leaders fully understanding and embracing their role in promoting and demonstrating a healthy Regulatory Safety

Oversight Culture and recommended the following:

- More frequent use of 360-degree feedback that will inform management development plans.
- Merit ratings will include considerations of the expected management behaviours.

Key progress to date includes, but is not limited to, updated performance management contracts for executives to "generate positive progress towards building a healthy and respectful workplace that is free from incivility and harassment." Key leadership competencies are embedded in all executive selection, development, and performance management processes. All new managers attend mandatory management training and participate in the new Directors Community of Practice.

The target completion date for this action is March 2019.

Recommendation number 2 pertains to the creation of a tool that captures, monitors, corrects, and communicates safety-related issues.

The CNSC should develop a tool for identifying, resolving, reporting, and communicating issues in order to further increase transparency around the communication of safety issues. The tool will enhance

transparency and provide assurance that the organization evaluates safety issues, promptly addresses and corrects them in a way that is commensurate with their significance, and communicates them to staff.

The CNSC acknowledges the importance of increasing transparency and the need for a single tool to standardize how the CNSC captures, monitors, corrects, and communicates on safety-related issues raised by staff.

To date, we have conducted benchmarking of best practices from other regulators and major licensees. We have drafted a proposed process for reporting and tracking safety-related issues. We have held preliminary discussions to pilot the proposed process within the power reactor regulatory program.

We are targeting a March 2019 completion date.

Recommendation number 3 pertains to the creation of a safety culture policy.

The CNSC should develop an overarching safety culture vision or policy statement outlining the desired culture that it is striving to achieve. This recommendation seeks to provide a common understanding of a healthy Regulatory Safety Oversight Culture among staff and further position safety as an overarching value.

The CNSC recognizes the importance of

articulating the desired Regulatory Safety Oversight Culture.

Key progress to date includes the conduct of benchmarking of safety culture policies from other regulators and licensees, drafting the proposed safety oversight culture policy, and circulating the draft policy to all CNSC staff for internal review this past summer.

The target completion date for this action is December 2018.

Recommendation number 4 pertains to the knowledge management.

The CNSC should develop strategies to ensure that critical technical and regulatory knowledge, including knowledge of past experience, is actively managed as a resource and is readily available to staff.

The CNSC recognizes the importance of managing critical technical and regulatory knowledge across the organization and the need for a corporate-wide knowledge management strategy. The CNSC has begun implementing a comprehensive three-year strategy to capture and share corporate, technical, and regulatory knowledge to maintain the organization's capacity and capability to meet its mandate.

The CNSC has also implemented the Capability for Nuclear Safety Project, which aims to ensure

continued access to required scientific and technical expertise, knowledge, and research infrastructure.

To date, we have identified critical knowledge roles and successors, added knowledge management objectives in managers' performance management contracts, and drafted a knowledge management policy, which is currently under review. We also created a catalogue that captures CNSC's required scientific and technical expertise.

The management action plan details the outstanding actions to be completed to meet the target completion date of May 2020 for the knowledge management and December 2018 for the Capability for Nuclear Safety Project.

Recommendation number 5 pertains to a follow-up assessment.

The CNSC should conduct a follow-up regulatory safety oversight assessment in three to five years to confirm the effectiveness of the actions resulting from this assessment and to deepen the commitment to continuously strength the CNSC's Regulatory Safety Oversight Culture.

The CNSC has committed itself to conducting a follow-up assessment by May 2022, continuing to actively participate in national and international

developments, continuing the current approach of regularly evaluating and monitoring progress on employee uptake as well as monitoring effectiveness of processes and mechanisms.

In terms of progress made, we are reviewing lessons learned from the assessment. We participate in the NEA safety culture working group meetings and continue to evaluate progress through such means as employee surveys, town hall sessions, management retreats, and all-staff discussions.

The CNSC has committed itself to conducting a follow-up assessment by May 2022.

I will now turn the presentation over to Mr. Hugh Robertson, who will talk about the management action plans, conclusions, and next steps.

MR. ROBERTSON: Thank you, Mme Grondin.

Madam President, Members of the Commission, Hugh Robertson, for the record.

The detailed management action plan, or MAP, was prepared by CNSC staff to respond to the assessment recommendations, establish staff leads, and identify deliverables and due dates for completing the work. The MAP is being monitored and tracked to completion through the CNSC's harmonized plan program.

I would like to note that the CNSC

realizes that by simply completing this management action plan we are not guaranteeing success. Rather, it is incumbent on all of us to demonstrate these traits in our day-to-day activities. Management understands that our actions often speak louder than words. To that end, CNSC's Operations Management Committee under the leadership of our executive vice-president engaged a coach to work with us over the last year to embed these traits in our day-to-day activities with our colleagues and, most importantly, with staff. By modelling these in our day-to-day work, we have the best chance to ensure our Regulatory Safety Oversight Culture truly becomes part of our day-to-day life.

The CNSC is committed to enhance and maintain a healthy Regulatory Safety Oversight Culture. The chief regulatory operations officer, as the Regulatory Safety Oversight Culture executive champion, will continue to be accountable to foster a healthy safety culture. And our directorate, as the custodians of the relevant process documented in CNSC's management system, will maintain and incorporate feedback and lessons learned as they are captured.

In addition, management at all levels are encouraged to take every opportunity to promote safety considerations as our overriding priority. Furthermore, we are accountable and responsible for recognizing and

supporting staff to align with our desired Regulatory Safety Oversight Culture behaviours.

Finally, leadership for safety must be demonstrated at all levels, and staff are empowered to take individual responsibility and accountability for exhibiting behaviours that set the standard for safety.

In closing, the CNSC is continuing to put in place the policies, procedures, and practices that are aligned with creating and sustaining a healthy Regulatory Safety Oversight Culture.

CNSC staff conclude that the completed assessment and the initiatives put in place to address the direction received from the Commission reinforce CNSC staff's commitment to our Regulatory Safety Oversight Culture. CNSC staff will continue to foster an ongoing dialogue through our day-to-day activities and meetings as well as our safety culture town halls, the next one which is scheduled for January 10th of 2019. We will be monitoring progress through surveys and taking appropriate actions as required.

The CNSC plans to conduct a follow-up assessment in May 2022 to confirm the effectiveness of the actions taken resulting from this assessment. We will also continue to explore opportunities to continue to shape our culture. Some of the initiatives we will consider include

engaging with licensees in order to share safety culture best practices. Additionally, we will also look at engaging specific groups within the CNSC to better understand their needs and how we can ensure an inclusive, respectful, and healthy workplace.

I would like to reiterate that this is an important journey that we are on. We have learned much from this exercise, and our focus will continue to be on addressing the important issues raised in this assessment. While there is work to be done, we believe we are headed in the right direction. The CNSC will continue to seek opportunities to reinforce the type of culture that we want to have in our day-to-day activities and adjust and improve as we learn.

I will now turn the presentation over to Mr. Jammal to provide concluding remarks.

MR. JAMMAL: Thank you, Mr. Robertson.

Madam President, Members of the Commission, for the record, it's Ramzi Jammal.

As we presented to you, the dates might seem far away, but the work has already started, the building blocks already started. We are engaging our staff, our union representative, and management at all levels.

Self-assessment was not an easy task to

do. The CNSC is one of the few regulators that has taken on the self-assessment, and we've used, as we mentioned, Dr. Fleming as our guiding principle for the self-assessment.

So all of us, the CNSC staff, including myself, are expected to do their part in embedding safety in all that we do, and we will never compromise safety. We will continue to engage all of us staff in order to ensure that the completion of the management action plan and other initiatives will be completed on time and that we'll be providing you with an update accordingly.

So thank you for your attention. We're available to answer any questions you may have.

THE PRESIDENT: Thank you.

Before we open it up for questions from Commission Members, Dr. Fleming, do you want to add any opening remarks?

DR. FLEMING: Thank you, Madam President and Commissioners. My name is Dr. Mark Fleming, for the record.

No, I don't have any additional comments that I would like to add. I'd just like to say that I support the comments that have been made and that the CNSC staff have done an excellent job in doing their self-assessment.

Thank you.

THE PRESIDENT: Thank you.

And I see Mr. Marcotte is here. Do you want to make any opening comments? There may be some questions directed your way later on.

MR. MARCOTTE: Harold Marcotte, for the record.

I haven't prepared any opening comments, but I have to say that NUREG is pleased that the Commission has afforded the attention that you have to this endeavour. And we look forward to working closely with management to make things better.

THE PRESIDENT: Thank you.

Well, we'll open it up to the Commission Members. Dr. Lacroix?

MEMBER LACROIX: Thank you. And thank you for this presentation -- clear, concise, illuminating. I enjoyed it.

First of all, I couldn't agree more with the attributes and the principles of safety culture that are listed in this report. Of course, I speak for myself.

And I also found the recommendations quite interesting. And if we go to slide number 19, on recommendation number 1, which is on coaching and mentoring the supervisors, managers, and executives on leadership.

And if we go down to recommendation number 4, which is on page 22, on slide 22, and it concerns knowledge management and the transfer of knowledge to the staff.

My question concerns both these recommendations, is that is it conceivable to extend these recommendations to the Members of the Commission? And by that, I mean is it feasible, and what would it mean, what would it involve?

MR. ROBERTSON: Sorry, Hugh Robertson, for the record.

As far as the knowledge management, we are certainly capturing that collectively for the organization. Obviously, as we have a lot of turnover, folks are retiring, and as you saw yesterday, with all the new staff coming in, they're taking advantage of that.

We have courses that are actually training people internally how to share their knowledge and capture it appropriately. But certainly, there's nothing preventing us from sharing that knowledge with people who could benefit from that.

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

I would like to complement a couple of things that Mr. Robertson has mentioned.

With respect to the knowledge management

of the Commission itself, we have a very strong, robust system in place. It's called the Record of Decision. So the changes that has taken place, the improvements in the Record of Decision of the Commission, is providing the historical element and the basis of the Record for Decisions.

So from our perspective, you as a Commission -- I cannot speak on your behalf, but I can commend the fact that our Commission is one of the best in the world by providing the knowledge management on why the decision was rendered. So we have a solid process.

At the staff level, and the challenge we're facing, as you saw the training program for our staff that were before you yesterday. So we're introducing the knowledge management aspect via the management system.

So when we speak of a multi-key system, for example, the guidelines for inspections, for the complex facilities, and in response to the Auditor General recommendations, we implemented the clarity on the multi-key system. So in other words, the technical information that is required to render a regulatory recommendation already established for many of our inspection processes. And there is not one inspection guideline that is used by staff that is not approved by the multifacets of the organization.

So the transparency has been established. And in that guidelines, we are establishing the knowledge management. The work we have to continue to work on is with respect to the results of the inspections, so that it's clear on why the decision was made.

With respect to the coaching element, I did engage a coach for the Operation Management Committee, and I said it before and I'll keep saying it, was it needed the problem in order to have a proper safety culture in place. So the coach engaged at the senior level for director generals. Improvements has taken place. And the coach will continue to coach the Operation Management Committee. And service has been offered at the divisional level and the directorate level.

So it's an ongoing engagement of the coach. And the individual, Ms. Chapman, who knows our organization very, very well, has been really engaged in our processes in order to improve the safety culture at this organization via multiple processes.

MEMBER LACROIX: So from what I understand, there's no barrier not to include the Members of this Commission on the coaching and mentoring of leadership.

MR. JAMMAL: In principle, there isn't, but we'll leave it up to the president of the Commission to

determine that decision.

THE PRESIDENT: And I think that's a very, very interesting point that you raise, Dr. Lacroix, is how do we as a Commission also demonstrate the right attributes of regulatory oversight safety culture. The knowledge management part, I think, Mr. Jammal addressed that very well with the Record of Decision. But as far as any coaching or mentoring or training that we need, I think that's something we can certainly talk about later. But that's a great point. Thank you.

Ms Penney?

MEMBER PENNEY: Thank you very much for the presentation. It looks like a lot of really good work has been done, collaborative across many parts of the organization, and we applaud that.

I'm interested in your Differences of Professional Opinion Process. I think I heard someone call it DOPO. And I sounds really interesting. How does it work? What does that look like?

MR. ROBERTSON: Hugh Robertson, for the record.

Yes, we have a number of these processes that are sort of increasing. We start with the Open Door Policy, where you'll see in the statistics and that stuff we have from the Public Service Employee Survey, other poll

surveys, is generally or is by far the preferred method of resolving these differences. That can then, you know, go into -- and that's where the multi-key system comes in, where everyone gets a chance to discuss this. Then we have a Non-Concurrence Process, which is a process but a little less formal. Then it escalates into the DOPO, which is a much more formal process.

All of those were -- especially the Non-concurrence and DOPO -- is looking at making sure that we share the results of those so that people can learn. And then we learn from the process and improve that as we go forward.

We have not leveraged the DOPO Process as of yet. We've had a couple Non-concurrence Processes that we've gone through and already sort of fed back in lessons learned.

But I can pass it to Jennifer, who can speak to the process in a bit more detail.

MS CAMPBELL: Good morning, Madam President and Members of the Commission. My name is Jennifer Campbell, for the record. I am a project officer in IQMD, and I was involved with the Scientific Integrity working group as NUREG's representation.

The Difference of Professional Opinion Process is, as my director general just mentioned, the most

formal of the methods for raising issues.

So the Scientific Integrity Working Group collaboratively worked to create or formalize what was called an Open Door Process. So this was communication that was already happening at certain levels. People were talking and going to people with concerns. So the Open Door Policy just formalized that process to ensure that people felt comfortable going to any door, so across the CNSC, right up to the executives and the president as well.

The Non-concurrence Process is a little more formal and is a written process where issues are written, technical documents in support. And it's gone through directors and DGs to come to a resolution for the issue.

So we're hoping that because of the difference in formality of these procedures that the Open Door Policy will be used the most, of course, communication. Non-concurrence, when a situation arises, it's more comfortable for staff to raise issues that way. And at the end, the more formal DOPO Process, which involves a panel, a lot of work, and a lot of consideration.

So these processes were made in a very collaborative method with representatives from NUREG, from staff, and from management. And we've had four uses of the

Non-concurrence, although two of the uses -- two of the Non-concurrence were raised on the same issue, so they found another method of resolution. We have one completed Non-concurrence that was posted to BORIS, to the website. So everybody has access to see the details and how it was worked out. And we're currently going through a new Non-concurrence, which will be resolved in the future.

Through that, we have also taken the initiative to improve the process because we've canvassed the people that have used it and said, How is the process? Are there issues? Is there anything getting in the way with you bringing these issues forward? So it's an ongoing endeavour.

MR. ROBERTSON: Hugh Robertson, for the record.

And of course, we're stuck in that Catch-22 of we're pleased when things are getting resolved at a lower level, but at the same time we would like to see something go through the process so we can validate it and learn and -- from those things. So. We'll see how that evolves.

THE PRESIDENT: Did you ever consider, I don't know, a suggestion box or something more anonymous that people can send if they, even with the Open Door Policy, they're not comfortable in raising issues.

MR. ROBERTSON: Hugh Robertson, for the record.

Yes, we actually have on our -- *Synergy*, our publication that we publish every few weeks. It's called "Ask Jackie." And essentially this is where folks can either anonymously or with a name submit questions. And in fact we have one coming through the system right now about the Regulatory Safety Oversight Culture and the DOPO and Non-concurrence Process. So yes, we have put that in place.

THE PRESIDENT: Thank you.

Mr. Berube?

MEMBER BERUBE: Well, thanks for this report. I know about one of the hardest things anybody can do is look at themselves in the mirror and be honest. So congratulations on trying to move forward with that process. That's an ongoing process. And most of us, when we do that, we don't like ourselves very much. So at the end of the day, don't feel bad, because we all feel the same way. So the idea is to get through that as quickly as possible and then get on with the process of self-improvement, which is of course the next step. And that's where we're at right now.

As I'm looking at all this documentation you've given me here, I find it's interesting because to

me, it's like a navigation system. How do we actually get to a safety culture?

But one of the things that maybe it's just an omission, something I didn't see here and you could fill me in on this is where is the CNSC's defined safety culture? Where is it? Where is the statement of what values and belief systems that we're trying to actually pursue? Because without that, it's like we're a ship but we're not sure where we're going; right? So we got a good nav system, but what is the belief and what is the underlying behavioural patterns that we're looking for in terms of a safety culture within the unit?

MR. ROBERTSON: Hugh Robertson, for the record.

Yes, that's one of the key recommendations was to come up with a safety culture policy. And we made -- I think that was recommendation 3 in there.

What we've done to date on that one is in fact with the working group, they've developed this policy. We've sent it out to staff. We received quite a few comments and we're dispositioning that. We'll be bringing it to our Management Committee in the next month or two with the plan to roll it out and finalize it by the end of this calendar year. And so in there, the intent is to find those attributes.

MEMBER BERUBE: That's very critical. And I would suggest that once you've identified those and you all agree upon them is to actually introduce them at the HR process to do an evaluation up front because it is a heck of a lot easier to hire people that have those value systems in place and those behaviours than it is try and align them after the fact, so -- as you're well aware.

MR. JAMMAL: Ramzi Jammal, for the record. To complement the response from Mr. Robertson, regardless of the establishment or drafting the policy, in the performance measurement contract for all of the management has included the element with respect to being the, I'm paraphrasing, being the champions for the safety culture on day-to-day activity.

So, and our HR performance management by which everyone is accountable to multiple level at the management level has incorporated in it the safety culture or Regulatory Safety Oversight Culture to be implemented by the management team based on the attributes while we're putting in place a global policy that will be in our management system.

MR. ROBERTSON: Hugh Robertson, for the record. And I can state that I've actually participated in about seven interview boards for director level positions where we're really focused on that.

And perhaps I could just pass this to Ms. Robin Butler, our Director General of Human Resources, to expand on that.

MS BUTLER: Good morning, Robin Butler for the record, Director General of Human Resources.

The CNSC has done a great job actually in the last couple of years of really establishing the behavioural competencies required in the organization throughout all levels of the organization. So, in 2014 we adopted the Treasury Board key leadership competencies and integrated that into all executive talent management.

More recently we introduced the key behavioural competencies for the organization which was developed with staff to identify those behaviours that we felt were important for all employees to demonstrate and are very much aligned with the requirements of the safety culture.

So, those currently include learn it, build it, own it and live it. And within that they have described what that looks like. The team has also done a lot of presentations and workshops with management teams and employees to really talk about, what does this all look like in your day-to-day work so that people are clear about what they're discussing, how they're evaluating, how they're giving feedback to each other, how they're

developing in an ongoing way around the behaviours that support the safety culture.

THE PRESIDENT: Dr. Demeter?

MEMBER DEMETER: Thank you for that response. And I did review the August, 2017 CMD that referred to this as well, it's a starting point and this is a nice progression of that process.

I want to take a step back. I was listening to all of this. Safety culture is obviously a big part of this organization, but it's a subset of general workplace morale and satisfaction.

So, in addition to safety culture, do you have a mechanism to assess general staff morale and satisfaction because if there is dissatisfaction it may be demonstrated in various methods including safety culture.

But taking a step up, the bigger picture, is there a way to engage workplace satisfaction and morale because that would feed into any subsection?

MR. ROBERTSON: Hugh Robertson, for the record. Certainly there's a number of tools whether it's the public service employees survey that is now every year, they have an executive level one. We do a lot of pulse surveys as well focusing on specific areas, and certainly more recently with creating a healthy workplace, but I'd like to pass that to Ms Robin Butler to speak to that and

maybe some of the results, if you're interested as well.

MEMBER DEMETER: Yes, especially if it's public sector, how we compare.

MS BUTLER: So, Robin Butler, for the record. We have been participating in the public service employees survey since 2011 that I have data on. Overall our response rates are above the core public service. In the last round of surveying we were at 85 per cent.

At this point we are actually just closing, the annual survey is tomorrow, we are currently at 75 per cent as compared to the public service which has a response rate of about 54 per cent right now.

So, our employees are very engaged in this survey and I think the reason that we are so engaged is that we do push that information out by directorate, so every directorate receives the results, employees are engaged to really dig into what those results are and what the issues are that are affecting them locally as well as overall at the CNSC and action plans are created.

So, this year because we knew the survey was moving to an annual survey we asked directorates to really focus in on one particular area that they could start to see more progress on through the surveys.

The majority of directorates are working on workload stress which was the common theme across the

organization.

Overall on those factors that you spoke about in terms of workplace engagement, feeling good about your employer and wanting to recommend your employer to other people as a great place to work, we have very strong results in areas of career development, people speaking to that we provide for good workplace/work life balance, that they feel valued at work, they feel respected and that they do important work, they're very proud of their work here.

And again, on the career development side we're seeing lots of great results for people who see that they have a career here at the CNSC.

THE PRESIDENT: I have a question, maybe for you, Dr. Fleming, and then maybe Mr. Richardson you two can discuss that.

So, when I thought about a regulatory oversight safety culture a couple of attributes that I particularly would be on there besides the questioning attitude and respecting and encouraging diverse opinions and having processes for resolution of differences, was around the independence of the regulator, the regulatory capture concern which was prevalent in the Fukushima incident, and I didn't quite see that translated in the NEA Book or even in our assessment.

How would that manifest itself and how

would we assess that?

DR. FLEMING: Thank you, Madame President. Dr. Mark Fleming, for the record. Yes. So, when we talk about regulatory oversight safety culture regulatory capture comes up as a theme as it did, to an extent in Fukushima it was slightly different, but it's definitely a concern that organizations have.

When the internal team were looking at their historical data and the information they had, these were the sort of themes that sort of came out as being sort of primary, drawing mainly on the NEA work because it was the work that was available at the time.

The question then becomes, well, how would we -- if we were trying to look at regulatory capture, how would we look at it, what would that look like? And through discussions and through sort of thinking about that, and I was sitting on an IAEA working group to develop a safety culture assessment process, we could ask sort of general questions, do you think the organization is, you know, being unduly influenced? But then we thought, well, actually where it would really appear more visibly would be in that, sort of being able to raise concerns and dealing with differences of opinion in that sort of process.

So, if you can imagine, if there was either regulatory capture by a political entity or by say

the industry itself, then if you were trying to make that happen within your organization how you would do it would be by suppressing the concerns being raised by the expert.

So, that's really how we assess that. One of the challenges about sort of culture is that it's hard for you to sort of see what is sort of the wood from the tree sometimes in the sense that if you were being sort of captured in the sense of the way it happened in Fukushima it was more of a mindset that had built up, not that they were being unduly influenced by anyone or being told what to do, but they had adopted a framework whereby, you know, we are safe and our job is to tell people we are safe rather than to assure that we're safe.

So, that's a challenge that's hard to manage. What will be helpful in that process is having people coming in, newer staff coming in so that people can have that sort of challenge and debate.

So, that's the Fukushima issue which is slightly different from regulatory capture is more that just -- you can't see it because you're too close to it and that's a very difficult issue for organizations to deal with, both regulators and others. There's no easy solution, but the reason we didn't have a theme which said regulatory capture was that it was going to be manifested in terms of how we were thinking about it in the domains

around conflict resolution principally, if that answers your question.

THE PRESIDENT: It does. Thank you very much, that was very helpful. And, Mr. Richardson, I think you are the person to ask about how we oversee the licensees and their safety culture; is that correct? Is that what your area is?

MR. RICHARDSON: Ross Richardson, for the record. So, I'm the Director of the Human and Organization Performance Division at the CNSC.

In a previous role I was intimately involved in the conduct of this assessment as well. But just to get to the question regarding independence and regulatory capture, so we did capture that in the report itself, we talked about specific threats that regulators are vulnerable to and that's in the introduction of the report. And it's interesting to note that these threats aren't specific to nuclear regulators, all regulators are susceptible to these threats.

The only other thing I can add is that there is a sister NEA green booklet, if you will, called Characteristics of an Effective Nuclear Regulatory Body and I believe that we have adopted those characteristics and one of those characteristics specifically is independence. And so that's another aspect that I can add to this

discussion.

THE PRESIDENT: Thank you.

MR. JAMMAL: Sorry to interrupt, if I may add with respect to the regulatory capture. Dr. Fleming spoke about the internal element and so has Mr. Richardson, but post-Fukushima one of the key elements that has occurred after capture is the engagement and the transparency of the public in the regulatory process.

So, the CNSC has a completely different transparent and public engagement process and at times -- not at times, quite significantly there is always interventions coming before the Commission that highlights issues of concern from a public perspective and we take those in consideration in our proceedings and we are obligated to respond and the record of the decision of the Commission reflects the input that has been provided with respect to the final regulatory decision.

And that's one of the key factors that was missing in the -- I'm going to say it non-diplomatically -- in the Japanese system where the transparency of the public or the engagement of the public in the regulatory process and regulatory decision was absent.

THE PRESIDENT: Right. My question was more on how are we assessing it with this mechanism? And before I just turn it to Dr. Lacroix again, you mentioned

there are very few nuclear regulators who have done an assessment. Who has?

MR. ROBERTSON: Hugh Robertson, for the record. Sweden, Switzerland, Pakistan. The Korean one, South Korea obviously is embarking on that later this year. And we've actually -- through the international organizations we have actually shared lessons learned. We recently presented this to them and we're continuing to do that as we go forward.

THE PRESIDENT: Thank you. Dr. Lacroix?

MEMBER LACROIX: Thank you. I'm pursuing on this matter and my question is directed to Mr. Jammal. What are the attributes, the highlights, the main characteristics that set CNSC's safety culture from that of NRC or other regulatory bodies in Europe or in Asia, for instance?

MR. JAMMAL: Ramzi Jammal, for the record. I'll start with the fact that I'm not a diplomat nor a politician so I'm going to call it the way it is.

Looking at the -- arising from the Convention of Nuclear Safety, the President's report addressed a couple of things, the regulatory oversight safety culture -- so, in other words, as Mr. Richardson spoke about, the regulators oversight against the operators, that is a very well established practice, let me

put it this way, because the safety culture is a soft element and how do you assess its effectiveness. So, the regulators do have enough regulatory operation experience in overseeing the safety culture of an operator.

With respect to the safety culture of the regulators themselves, one of the things that the Convention of Nuclear Safety has addressed the fact that the regulators are asking the IAEA and the international organization to establish attributes for a regulator and the regulatory oversight safety culture.

So, where are we? Even though Mr. Robertson spoke about other regulatory bodies who did the self-assessment, under the IAEA attributes Pakistan was the first regulatory body to undergo the assessment. When we say we are one of the few using systematically self-assessment under the NEA and the IAEA, we're number two -- I mean, I consider ourselves number one, but globally with respect to the others they have implemented what we call a workshop of the safety culture where they engage both the regulator and the industry in one room so to look at it from a collective, what I call the safety culture bubble.

So, this is a new element that the NEA is putting in place and Canada as us, the CNSC, has put ourselves on the list to be assessed with the operator.

So, where we are internationally? We are at the fence with respect to the others of the self-assessment. I can speak of the USNRC, they have a special safety culture group that was created. They have not conducted self-assessment as we did in systematic approach. They have an open door policy, they talk about it, but there is no formal implementation but they have a policy in place and we are drafting our policy.

With respect to Japan, again, there are continuous improvement with respect to the safety culture of Japan. But culture, the word culture becomes a debate internationally, what a safety culture meaning in Canada becomes a different cultural meaning in different societies. And that's the challenge internationally that is being faced. So, that is why the IAEA is putting in place the attributes for safety culture of the regulator and so is the OECD, NEA is doing the same thing.

THE PRESIDENT: Ms Penney?

MEMBER PENNEY: Interested in the role of the chief scientist and how that fits into the whole transparency piece.

MR. JAMMAL: Mr. Peter Elder is covering for us in the ETT hotwatch(ph), the emergency exercise. We probably will try to call him up, but definitely the role -- I can speak at a high level --the role of chief

science is he's becoming a final, I won't call it decision-maker, but mediator with respect to technical information.

So, Mr. Elder will look at the technical information as it's being presented with respect to the DOPO or any other technical requirements that he feels will be addressed and then he will discuss the technical information that's being presented to him.

In addition, he's a got a bigger role to put in place where for the operation management committee, he will bring forth any technical issues that needs to be ironed out or debated as a specific technical focus.

So, his role is as the chief scientific officer and at the global level to look at the research requirement, to look at the technical information in support of regulatory recommendations and address if there is any conflict internally so that he will have the final decision and then he will put a report in place as the Chief Science Officer with respect to the decision on the technical information.

MEMBER PENNEY: Does he report to the President?

MR. JAMMAL: He does -- of course he does report to the President.

THE PRESIDENT: Mr. Berube? Dr. Demeter?

MEMBER DEMETER: Thanks. Just a little clarification question. So, you've got this escalation of open door, non-concurrence, difference of professional opinion the chief scientific officer, do individuals overlap between those processes such that the same people might be -- that are dealing with a non-concurrence process may be part of the difference in professional opinion process? Is there a way to ensure that there's not sort of a forward bias. If a decision was made at one level and it goes to the next level to avoid that forward bias of the previous decision?

MR. ROBERTSON: Hugh Robertson, for the record. Certainly those affected individuals who are raising the issue and their direct line management would be involved, for example, in the non-concurrence, but the Chief Science Officer essentially stays out of that until that last level, the difference of professional opinion where he sort of arbitrates that last level.

So, while of course all the information if it does continue to escalate will be used to inform that final decision, certainly it's not the same people making those decisions at each of those levels, if that answers your question.

Thank you.

MEMBER DEMETER: Just a quick question.

So, you've talked about you haven't been able to test the difference of professional opinion very much. How do you gauge peoples' willingness to use that mechanism? You're happy that people are using the open door, but sometimes you don't know what you don't know and so how do you gauge if people are comfortable with these processes; and if they're comfortable they're not using it because they find other means, or if they're uncomfortable and not using it because they're uncomfortable; how do you gauge that?

MR. ROBERTSON: Hugh Robertson, for the record. Certainly we need to continue to explore that. We've done a taking the pulse survey in the past where we've asked people are they familiar with these different tools, what is their willingness to use that and certainly it's those kind of statistics where we see by far and away the open door policy is the preferred one.

And I think -- or my opinion as we get a few perhaps more of the non-concurrence and they see how that works that they'll gain more confidence because again, this is a journey, right, we're not doing this right at once and I think, you know, there's inherent scepticism perhaps that we have to address over time. So I think we continue to assess that through, you know, pulse surveys, hopefully get some more experience under our belt with the non-concurrence and the other ones in here and we can see

that.

So, I can pass it to -- for a little more information to Ms Jennifer Campbell.

MS CAMPBELL: Thank you. Jennifer Campbell, for the record. With the open door policy and the results of the pulse survey it was very clear that people were very much more comfortable with using the open door policy.

So with the non-concurrence policy we've been encouraging its use and also explaining the role of the Chief Science Officer which was part of the scientific integrity working group's role as well as now it's moved to the safety culture working role to ensure that people are aware of the different processes.

With the non-concurrence process and the DOPO process we instituted in the process that if this issue has been raised before and gone through the process, unless there's new scientific or technical information it's not to be raised again. So we have a built-in role as the Chief Science Officer at the top, he can select people to be on a panel for the DOPO. So if an issue has been raised and it's gone through the non-concurrence the Chief Science Officer can ensure that new people are brought forward to consider the decision and to consider the issues.

And we're hoping that we will use our

lower formal processes in a very collaborative environment which our safety culture is going to achieve and only have the higher formal processes for when a situation is extraordinary.

THE PRESIDENT: Mr. Marcotte, do you want to comment on what you hear from your members around the comfort and using even the open door policy?

MR. MARCOTTE: Harold Marcotte, NUREG President, for the record. Our members are very much similar to the rest of the public service in that there is a certain level of fear of reprisal that prevents them from coming forward. And the numbers you see in these surveys are sort of the tip of the iceberg and our stewards actually can see below the surface somewhat better because people do come to us and say, oh, look at this awful thing that is happening and when we ask, well, would you like to do something about it, they say, are you kidding? This is not the way I'd like to end my career.

So, there is an element of that and like I said we're not -- I don't believe we're much better or much worse than the rest of the public service.

So, there is some difficulty in a lot of people using those formal processes and even the informal processes.

So, a lot of these numbers go uncounted

and very difficult to count, but the problem does exist and we would like to be involved in addressing that problem. For example, some of the issues perhaps are systemic in nature in some of the policies and practices that inadvertently get introduced into the processes that perhaps prevent people from wishing to come forward.

Some perhaps levels of transparency, say, within the staffing policy or the harassment policy might prevent people from actually exercising what we would like to see. Personally what I would like to see, at least before I leave the CNSC, and I don't know if this is achievable, but I would really like to see us being a fearless organization and that is one where no one is afraid to speak out on any issue that is of concern to them.

THE PRESIDENT: And I don't think there is anyone in this room that doesn't have that same objective. So is there any -- well, I have two parts. One is we heard that there are pulse surveys. So if fear of reprisal was a concern, then that shouldn't prevent staff from saying, well, I'm uncomfortable using these processes, even the informal process, and I don't know what our pulse surveys show around that, but hopefully that will give us some measure of how widespread that particular concern is. But the more significant one is, so what else would you

recommend that be added to the action plan to make this a fearless organization?

MR. MARCOTTE: I think what would certainly help is if we did a review of the human resources policies, staffing, knowledge management, harassment, if that was done with an eye on the safety culture to see if there are any elements of it that perhaps contribute to diminishing the safety culture and possibly enhancing the areas of those policies that actually would increase the safety culture and involving NUREG, the union, in the process more on a partnership or a bipartite method. Like they mentioned the multi-key process. If we somehow had a key or a portion of the key, that would certainly help.

THE PRESIDENT: Ms Butler, any comments on that?

MS BUTLER: Robin Butler, for the record.

So the pulse surveys that have been completed in 2013 and 2016 did speak to specifically the items around raising issues. In 2016, 73 percent of employees responded that their immediate supervisor was their preferred place and they felt safe to raise issues with that individual, and that increased in our 2017 PSES to 84 percent. So we clearly see that there are good relationships at the immediate supervisor level.

We do have a bit of an enigma in our data

in that we are seeing a consistent low trend around reporting feeling safe to initiate formal recourse mechanisms around fear of reprisal. Part of what I think we need to get at is really understand how people are defining fear of reprisal. That can be different for every individual and we don't have a lot of good examples there to help us really understand what the key issue is.

On the harassment front we do know through labour relations, as people are coming in to speak to us about issues and they want to go forward, there is fear obviously of being able to share an incident with the accused and them knowing who they are, and we are still trying to figure that one out because part of fair process is that you have a right to know who has accused you of what and when. So we are looking to a lot of changes that are happening out in the labour relations and *Canadian Labour Code* around psychological safety and we will wait to hear more about what that is going to look like in the employer workspace.

THE PRESIDENT: What about the specific recommendation that we actually revisit our policies with a lens of safety culture and involve the union leadership in that?

MS BUTLER: So the staffing policy was just reviewed and updated and did have NUREG consultation

and input into that process as well. We are certainly open to working with the union to go through all of those policies. The respectful workplace policy is one that we are constantly looking at, again with some of the changes that are happening out in the broader public service area. We know that there is a key initiative around healthy workspaces and we are looking to see how we are aligning with what those recommendations are and what work can happen and that is a great opportunity for us to work with the union on those aspects.

THE PRESIDENT: Thank you.

Dr. Lacroix...?

MEMBER LACROIX: No more.

THE PRESIDENT: Ms Penney...?

My last question then is, you recommend that the next self-assessment not be done until 2022 and given this is a journey and these are kind of early steps, would an earlier self-assessment not be more appropriate just to make sure that we are hitting the right areas and actually measuring some progress?

MR. ROBERTSON: Hugh Robertson, for the record.

Certainly, that's an option. I think one of the things we want to do -- because we recognize this is a journey and measuring that will take a bit of time. Our

focus certainly was on, as Mr. Jammal mentioned, maybe some opportunities with the NEA initiative to work with the licensees, to focus a bit more on maybe some specific groups within the CNSC to understand if their needs or their concerns are slightly different so we can adjust and amend. I think that was partly why we had set that date sort of as a best practice, that we can -- it's not waiting until that point, it's trying to make sure and get it more embedded in the organization before measuring. But certainly if that is the direction, it is something we could look at. But we weren't going to just be waiting for that, we have some specific actions we want to do.

THE PRESIDENT: Thank you. And when is the next set of pulse surveys being contemplated?

MS BUTLER: Robin Butler, for the record.

We are actually just working on a schedule right now that would be presented to the Executive Committee to make determinations of the dates and the particular subjects that we would be pursuing.

THE PRESIDENT: Thank you. Again, thank you very much for that presentation and that discussion. I really commend you on embarking on this journey and a lot of great work done here.

MR. MARCOTTE: Madam President, may I add one more comment? I have to say that NUREG is pleased to

be involved in the process and we look forward to working with management on making this a better place to work. Thank you very much.

THE PRESIDENT: Thank you. Thank you for your participation.

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

--- Whereupon the meeting concluded at 12:20 p.m. /
La réunion est ajournée à 12 h 20