

Canadian Nuclear
Safety Commission

Commission canadienne de
sûreté nucléaire

Public meeting

Réunion publique

June 17th, 2020

Le 17 juin 2020

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

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

via videoconference

par vidéoconférence

Commission Members present

Commissaires présents

Ms Rumina Velshi
Dr. Sandor Demeter
Dr. Timothy Berube
Dr. Marcel Lacroix
Dr. Stephen McKinnon

M^{me} Rumina Velshi
D^r Sandor Demeter
M. Timothy Berube
M. Marcel Lacroix
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Secretary:

Secrétaire:

Mr. Marc Leblanc

M^e Marc Leblanc

Senior General Counsel:

Avocate-générale principale :

Ms. Lisa Thiele

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Ottawa, Ontario / Ottawa (Ontario)

--- Upon commencing on Wednesday, June 17, 2020
at 9:00 a.m. / La réunion débute le mercredi
17 juin 2020 à 9 h 00

Opening Remarks

THE PRESIDENT: Good morning everyone and welcome to our first ever virtual 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 I am conducting this virtual Commission meeting from Ottawa, in the Unceded Traditional Territory of the Algonquin peoples.

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, remotely: Dr. Sandor Demeter, Dr. Stephen McKinnon, Dr. Marcel Lacroix and Dr. Timothy Berube.

Ms Lisa Thiele, Senior General Counsel to

the Commission, is also joining us remotely, and Mr. Marc Leblanc, Secretary of the Commission, is with me on the podium today.

I would like to begin today's Commission meeting with a Safety Moment to talk about "Zoom fatigue", a new term coined during the COVID-19 pandemic.

Zoom fatigue is a result of our calendars getting filled with videoconferences. Zoom fatigue is real. It results in pain in the eyes, exhaustion, blurry vision, fatigue, headache, dry eyes, and the list goes on.

Over the next two days, as we conduct our first ever virtual Commission meeting, there are a few things we can do to mitigate the hazards associated with videoconferencing. There are three specific recommendations that experts suggest that I find particularly helpful.

The first is take a break at regular intervals to stretch and move around. And we have tried to build in our schedule over the next couple of days regular breaks to allow us to do just that.

The second is practise the 20-20-20 rule. Look at something that is 20 feet away from the screen, watch it for 20 seconds every 20 minutes, and this is to

avoid eyestrain. So if we appear to be gazing away into the distance, please do not take that to mean that we are not fully engaged in the discussion, we are simply giving our eyes a rest.

The third is adjust how your Zoom call looks. Instead of selecting a gallery view, which requires you to focus on everyone in the Zoom meeting at once, the so-called Brady Bunch look, focus on just one person. Select the speaker view. I am told this is better for you both mentally and also for your eyes.

So with these three simple suggestions I do hope we can improve our Zoom experience over the next two days.

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

Marc, over to you.

M. LEBLANC : Merci, Madame la Présidente.

Bonjour, Mesdames et Messieurs.

Mon nom est Marc Leblanc. Je suis le secrétaire de la Commission.

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

For the Commission meeting we have

simultaneous interpretation. Please keep the pace of your speech relatively slow so that the interpreters are able to keep up. Interpreters are typically in the same room as we are, but now they are in different facilities to ensure that they can respect the distancing protocols.

To make the transcripts as complete and clear as possible, please identify yourself each time before you speak.

The transcripts will be available on the Commission's website probably next week or the week after.

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.

So whereas we are on a Zoom webinar for the participants, members of the public can observe the proceeding via the normal webcast -- the usual webcast through our CNSC website.

As a courtesy to others, please mute yourself if you are not presenting or answering a question. As usual, the President will be coordinating the questions and to avoid having two people talking at the same time it will be very important that you mute. If you do not mute,

we will, from Ottawa, be able to mute you, but we cannot unmute you once you are called to answer a question. So please manage your mute/unmute button accordingly.

Prière de gérer votre bouton de sourdine ou de son de façon appropriée.

During the questions, if you wish to provide an answer or add a comment, please use the Raising Hand function.

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

Please refer to the agenda published on June 3rd for the complete list of items to be presented today and tomorrow.

I also wish to note that all the Commission Member Documents (or CMDs) listed on the agenda are available on the CNSC website.

In addition to the written documents reviewed by the Commission for this meeting, CNSC staff and other registered participants will have an opportunity to make verbal comments and Commission Members will be afforded an opportunity to ask questions on the items before us.

Madame Velshi, présidente et première dirigeante de la CCSN, va présider la réunion publique d'aujourd'hui.

President Velshi...?

CMD 20-M7

Adoption of Agenda

THE PRESIDENT: With this information, I would now like to call for the adoption of the agenda by the Commission Members, as outlined in Commission Member Document CMD 20-M7.

Commission Members, any questions or concerns with the agenda?

Not seeing any raised hands, I think we have concurrence.

For the record, the agenda is adopted.

CMD 20-M8

**Approval of the Minutes of Commission Meeting
held on March 3, 2020**

THE PRESIDENT: The minutes of the

March 3rd, 2020 Commission meeting have been approved secretarially and are available on CNSC website.

THE PRESIDENT: The first item on the agenda is the Status Report on Power Reactors, as outlined in CMD 20-M10.

This item will also include an update on CNSC staff and licensees' response to the pandemic situation for the nuclear power plants.

I note that we have representatives from the nuclear power plants and CNSC staff joining us for this item. They can identify themselves later, before speaking.

Mr. Frappier, do you have anything to add before I turn the floor to my colleagues for questions?

CMD 20-M10

Status Report on Power Reactors

Submission from CNSC Staff

MR. FRAPPIER: Yes. Thank you and good morning, Madam President and Members of the Commission.

For the record, my name is Gerry Frappier and I am the Director General of the Power Reactor Regulations.

With me today, as you mentioned, are regulatory and technical managers and specialists, as well as representatives from industry.

I would like to start by saying these are not ordinary times and we all recognize the deep impact that the ongoing COVID pandemic is having on Canadian society and society worldwide. All of us have felt this impact and on behalf of all of our team I offer sincere condolences to all those who have lost loved ones to this disease.

The pandemic has caused a significant modification of how we provide oversight of nuclear power plants and in a minute I will explain some more of these points.

The Status Report on Power Reactors, CMD 20-M10, was finalized on June the 10th. The following are updates reflecting changes since that date.

For Bruce, Unit 4 is now at 89 percent and is returning to full power.

For Pickering, Unit 1 is at 65 percent and returning to full power.

As I noted, the current pandemic has had an effect on our operations.

On March 15th, the activation of the CNSC Business Continuity Plan resulted in Ottawa and site staff working from home. Consequently, direct onsite inspection activity ceased. Emphasis was placed on providing as much capability as possible to allow inspectors to continue providing oversight while not onsite or in the office.

All the inspectors possess computer tablets with virtual private network capabilities. This allows inspectors to access the CNSC network and continue working.

Furthermore, arrangements were made to provide inspectors with VPN access to the licensees' information systems. With this capability, many sight surveillance activities do not require a physical presence.

Therefore, surveillance continued largely unimpeded. Some inspections were able to continue remotely by reviewing licensees' documents and records.

Of particular note was the ability to continue with the regulatory oversight of Darlington Unit 2 as it returned to service after its refurbishment.

On April 14th, we issued an updated work procedure to provide direction for the conduct of oversight activities both remotely and onsite as well as direction on

revising the regulatory oversight plan for this fiscal year. This included a review of our planned inspections and decisions on how they could be modified to accommodate our new circumstances. Inspections were re-prioritized and procedures put in place to ensure the safety of inspectors in performing onsite inspections.

On May 4th, we issued a revised pre-job briefing procedure based on Government of Canada, Public Health Agency and licensees' COVID-19 protocol directions. This pre-job briefing is a requirement before any CNSC employee goes to an NPP site.

And on May 5, 2020, limited onsite inspections resumed.

CNSC staff continue to work on improving remote oversight capability and expect to make more changes as the COVID-19 situation evolves.

A last point I would like to make is on many occasions we have been before this Commission to discuss emergency planning and various exercises and drills that are required of the licensees in association with emergencies. While normally we talk about nuclear accidents, I would like to let the Commission and the public know that there has always been a requirement for

business continuity planning, including preparations for pandemics. So the licensees have been preparing for a pandemic even before the arrival of COVID-19.

Speaking of the licensees, industry has also undertaken many changes to their operations because of the pandemic and I believe they are prepared to make a statement on this if you desire.

This concludes the Status Report on Power Reactors. We are available to answer any questions you might have.

THE PRESIDENT: Thank you, Mr. Frappier.

Why don't we turn to the licensees and give them an opportunity to give us an update on their response to the pandemic.

I will start with OPG. Dr. Vecchiarelli, the floor is yours.

DR. VECCHIARELLI: Good morning, President Velshi and Members of the Commission.

Can you hear me all right?

THE PRESIDENT: Yes, we can.

DR. VECCHIARELLI: Thank you.

For the record, my name is Jack Vecchiarelli. I am the Vice President of Nuclear

Regulatory Affairs and Stakeholder Relations for Ontario Power Generation.

On behalf of the industry, in particular the currently operating nuclear generating stations, thank you for the opportunity to provide our perspective on this unprecedented event.

With me today are my colleagues, Stephanie Smith from OPG, Maury Burton from Bruce Power and Jason Nouwens from New Brunswick Power. Together we will give you a brief overview of industry's response to the COVID-19 pandemic thus far.

Before we start, allow me to express that we as Canadians have all been touched in some way by COVID-19 and families across Canada have been forever changed by its effects. On behalf of our respective organizations, I would like to express our sincere thanks and gratitude to all those who have worked the front lines in the ongoing battle to keep Canadians healthy, including doctors, nurses, pharmacists and other healthcare providers.

We also thank and appreciate those who continued working to keep us safe, fed and warm during the pandemic, from police officers and firefighters to the

staff at our local grocery stores and gas stations. We are grateful for all of these vital services which have been provided under difficult and challenging conditions.

I would also like to acknowledge that throughout this pandemic our own workers in the nuclear industry have provided an essential service to Canadians. In these unprecedented times, the need to ensure that our hospitals, homes and long-term care facilities have a safe, reliable source of electricity has never been more important. Throughout the past three months our employees and contractors have worked tirelessly to keep our nuclear plants in Ontario and New Brunswick operating safely around the clock. We are extremely proud of our collective workforce for their dedication and their unwavering focus on working safely through this pandemic.

I will now turn it over to Stephanie Smith.

MS SMITH: Thank you, Jack.

For the record, my name is Stephanie Smith and I am the Deputy Site Vice President for Darlington.

I would like to briefly elaborate on the industry response to COVID-19 and some of the measures implemented by OPG, Bruce Power and New Brunswick Power.

To begin with, we were well prepared. As part of our pandemic planning we have had a supply of protective equipment on hand and we have had business continuity plans in place and ready to go. We immediately put protective measures in place for all our staff and have had no known cases of COVID transmission in the days since the onset of the virus.

As the risk of COVID-19 emerged, we activated our pandemic planning teams as well as our incident command teams and centres in order to coordinate site response and draw upon experience gained from years of preparing for all manner of emergencies, including a pandemic. We focused on essential operating activities and limited major component replacement and refurbishment work, especially in the early stages of the outbreak.

We have since moved to resume outage, project and refurbishment activities in a safe, measured way in consultation with CNSC staff.

To ensure physical distancing and to assist our site communities and provinces in flattening the curve, we strictly limited access to our stations and implemented work from home policies for thousands of our employees.

To protect those who have continued to work onsite, we enacted a host of proactive measures such as implementing a wide range of physical distancing measures, including restricting control room access to critical staff only; staggering start times and designating specific routes to get into and out of generating stations to reduce crowding; monitoring the margin for critical staff available for early indication in case we started to track towards any shortage; verifying we had stockpiled sufficient protective equipment such as masks to protect our essential staff; installing temperature monitoring stations for staff at entrance points to our facilities; instituting facemask protocols to minimize the risk of transmission; revamping cafeteria and meeting room layouts to create physical distancing; and temporarily closing administrative buildings and redeploying maintenance staff to stations so they could concentrate on their cleaning and disinfecting efforts where they were most needed.

We initially deferred all non-regulatory required training and have in the days since increased the amount of virtual classes and online training programs for employees to access remotely.

We also recognized the need the outbreak

poses to people's emotional and mental health and we have provided staff with access to family assistance programs and medical professionals throughout the pandemic using telehealth applications.

Throughout it all, we have shared our insights and ideas with the rest of the nuclear community. As members of the World Association of Nuclear Operators, we are in constant contact with our industry peers to consider lessons learned by operators in all corners of the world.

I will now pass it over to Maury to share a few highlights of what the industry has done as members of wider communities that surround and support our families.

MR. BURTON: Thank you, Stephanie.

For the record, I am Maury Burton, the Senior Director of Regulatory Affairs at Bruce Power.

We are all fortunate to be part of well-informed, supportive communities who understand what we do to protect the public, our workers and our shared environment.

In this challenging time we look to support our communities as they respond to the unique

challenges presented by COVID-19, including collectively licensees answered the urgent call from our healthcare providers for PPE, donating more than a million masks and thousands of protective suits and plastic shields to the medical community.

We have hosted a series of interactive virtual town halls and Facebook live events with provincial and municipal leaders and medical officers of health. This has helped the community leaders reach thousands of residents with vital information.

One event even included retired NASA astronaut Captain Scott Kelly who gave advice to people about living in isolation.

In collaboration with local businesses, licensees have distributed thousands of litres of hand sanitizer free of charge to community groups, people in need, including seniors and indigenous communities, and worked with a variety of partners in the production of thousands of cloth masks.

In New Brunswick, NB Power worked with indigenous and surrounding community members who made cloth facemasks to help augment the stockpile of protective equipment used by Point Lepreau staff.

We have also donated thousands -- or hundreds of cots and partitions and other equipment to establish field hospitals in local arenas and community centres as proactive measures.

Through corporate donations and employee initiatives, we have given hundreds of thousands of dollars to food banks across the country and distributed thank you packages to local health and long-term care workers.

In Ontario we helped create the Retooling and Economic Recovery Council to work with government and the Chamber of Commerce to collaborate on plans to restore the economy, including retooling production lines to produce low-cost ventilators and medical gowns.

Through it all we have continued to produce and harvest about 70 percent of the world's supply of cobalt-60, which is an important isotope used to sterilize medical equipment at a time when the world needs it most.

I will now hand it over to Jason who will talk about some of the early lessons learned that we have garnered from this event.

MR. NOUWENS: Thank you, Maury.

For the record, I'm Jason Nouwens and I'm

the Director of Regulatory Affairs for Point Lepreau.

Before I reflect on a few of the early lessons we have drawn from our COVID-19 response, let me first say that our work is far from over, even though COVID-19's grip is beginning to loosen in large parts of Canada. While we remain vigilant, we also have begun to look back and consider what elements of our response have worked well and how can we strengthen our emergency plans even further.

So what have we learned so far? Not surprisingly, we have learned that our workforce is incredibly resilient, not so much as a lesson learned as a confirmation, rather. Like so many other Canadians, our employees have risen to the challenge of a once-in-a-century event and adapted to the new normal it has created. Most importantly, they have kept our units running safely and reliably and ensured that the day-to-day routines of their work were met at a time when nothing outside of work was routine.

Secondly, we have experienced once again the value of our drills and exercises. For us, emergency preparedness is part of regular business and we regularly simulate all manner of postulated events and test ourselves

to respond to things we may never experience or may only experience once in a lifetime, like a global pandemic. As a result, when COVID-19 came to Canada this spring, we were ready.

When our response teams gathered in our various command centres, it was not their first time in those chairs. We had pandemic plans ready and we put them into action. Our experience working through SARS provided our industry with lessons learned and resulted in implementation of certain processes that have proved invaluable in response to COVID-19, such as ensuring appropriate inventory of items such as N95 and surgical masks.

Of course, executing a plan to deal with a real event over several months is much different than a simulated drill that begins and ends in a day or two. In that way, the pandemic has taught us a few valuable lessons.

We learned how vital a robust supply chain is to an effective initial response and that while our pandemic plan had a robust supply of PPE, we were still competing with others for basic items like thermometers and hand sanitizer, which were not easy to obtain. We need to

reflect on what we needed most and how best to have it at our fingertips should a second wave hit.

Outside of the technology challenges, the outbreak has confirmed the value of communication and our community's desire to stay connected in challenging times. Telecommunication tools thankfully allow us to host virtual town halls and community liaison meetings and the Internet allows us to update webpages and social media accounts instantaneously. Nothing will ever replace face-to-face communications, but we have used every other method to remain in touch with our neighbours.

As Stephanie mentioned, the nuclear industry has a unique global network through WANO, the World Association of Nuclear Operators, to share best practices and lessons learned. It is important to note that we will continue to draw upon that resource in the months and years to come to ensure we are prepared for whatever new challenges lie ahead.

We have all been impacted in some manner by COVID-19 and we are bound together to resolve and find a way through this event. We truly are in this together.

Once again, thank you for this opportunity to share our industry perspective on this matter. We would

be happy to answer any questions you may have related to our collective response to the COVID-19 pandemic.

Thank you.

THE PRESIDENT: Thank you very much for sharing your perspectives.

I see we've got someone from Hydro-Québec who has also joined us. Was there anything you wanted to share?

M. OLIVIER : Donald Olivier pour le verbatim.

Peut-être rapidement juste mentionner qu'Hydro-Québec dispose d'un plan pour faire face à une pandémie. Donc, c'est ce plan-là qui a été déployé au tout début de l'événement. Donc, évidemment, les mesures qui ont été prises, c'est de favoriser la distanciation, les mesures aussi de prévention qui ont été mises en place. Donc, on a réduit nos effectifs à Gentilly dès mars au strict minimum.

Les gens sont de retour depuis le 1er juin. Donc, on est revenu à 100 pour cent, pas juste à Gentilly mais sur l'ensemble des centrales hydroélectriques aussi d'Hydro-Québec.

On a été soucieux de bien communiquer avec

nos employés. Donc, la présente directrice générale d'Hydro-Québec a communiqué avec les employés sur une base hebdomadaire pour les tenir informer, parce qu'on croyait que c'était une bonne façon de diminuer le stress ou les inquiétudes des employés.

Donc, évidemment, je vous confirme aujourd'hui qu'il n'y a pas eu de cas positif de recenser, de déclarer aux installations de Gentilly.

Donc, c'est tout, et si jamais il y a des questions, ça va nous faire plaisir d'y répondre.

LA PRÉSIDENTE : Merci. Thank you all for sharing your perspectives.

I'll now open the floor for questions from Commission Members to CNSC staff and licensees. And we'll start with Dr. Lacroix.

MEMBER LACROIX: Yes, thank you. Thank you all for your -- this update on the NPPs.

Mr. Frappier briefly mentioned -- and I would like to come back to this subject -- since the beginning of the pandemic, an increasing number of people is working from home. And I was wondering, is it fair to say that as we deploy tools and manners to reduce the risk of contamination from a biological virus, we simultaneously

increase the risk of contamination with a cyber virus? As a member of this Commission and as a member of the public, should I be concerned about this? And the question is directed to staff as well as to the industry. Thank you.

MR. FRAPPIER: Thank you very much for the question. Gerry Frappier, for the record.

Maybe I'll start, and then perhaps industry would like to also discuss.

I guess the essence of the question is given that we're using an awful lot more tools such as the Zoom that we're on right now, has that introduced some additional cyber threats.

I think from a staff perspective, we've been very conscious and discussed very explicitly as to when we are on platforms that are secure versus when we are on platforms that are not secure. So Zoom meetings in general are deemed not secure, and so we're very careful with anything that we might be saying about that sort of stuff. When we're on the virtual private networks, probably some other people better than me can talk about how secure they are, but our instructions are they're secure enough to discuss things up to what we call Protected B levels. So if we want to be discussing secret

matters, then there's other options that we have to use. So from an information perspective, we're somewhat protected.

From access to any of the nuclear safety systems, if you like, that are at nuclear power plants, the -- we are not introducing any new pathways that allow ourselves or anybody else access to control systems. And perhaps industry would be better placed to discuss about how they're protected from cyber, given this remote working from home. In their case, they have a lot of engineering staff and that, so there's perhaps some additional precautions made. So I'm not sure who from industry would prefer to answer that.

MS SMITH: So it's Stephanie Smith here, for the record.

From OPG's perspective, when we moved a lot of our staff back to the -- away from our facilities and started remote working, we ensured that we had a robust IT security plan. It was beefed up, and it was continually monitored throughout the pandemic, looking at, you know, what kind of issues were coming through our VPN. So we have a very robust cyber security program, and it is continually monitored on a daily basis by our IT people.

So that's from OPG.

I'm going to open up and see if there's any additional comment from Bruce Power or from Pointe Lepreau.

MR. BURTON: Okay, it's Maury Burton. I'll go next.

From Bruce Power perspective, we've done a lot of communications with our staff that are working from home from a security IT point of view. And a lot of it is because we do see additional phishing campaigns and other attempts to circumvent our security systems. So that a lot of it is just awareness for people.

And a lot -- another thing that we have warned people about is not emailing things to their own personal address, because then you lose control of things that are not on our network, which we do have appropriate security measures on for information protection.

And one of the other things we're doing, and I'll note I got one this morning, is our security IT are doing internal phishing campaigns to see if they can -- if people are following links that they shouldn't be, and that way they can go and actually talk to them and make sure that they're aware of what they -- that they shouldn't

click on unknown links.

I'll pass over to NB Power if they have anything to add.

MR. NOUWENS: Thank you, Maury. Jason Nouwens, for the record.

I think those previous three responses summarize all the aspects. I just want to reinforce the point that we have regulatory requirements on cyber security. We have Canadian Standards Association standards that we follow on cyber security. We have a very robust program in place, including awareness training for all staff, secure networks for critical information transmittal.

The COVID response really was -- it was a requirement for us to refresh our requirements in those areas. But as far as establishing new requirements, we had all the framework and all the integrity in place already to prevent cyber security attacks. This was just an opportunity for us to refresh and bring higher awareness to how critical that is for safe station operation. And you know, as more and more people worked off site, it was more important for us to maintain that safety standard.

THE PRESIDENT: Thank you.

Mr. Jammal, did you have something to add?

M JAMMAL : C'est Ramzi Jammal pour le verbatim.

Good morning colleagues and Commission Members.

I would like to complement Mr. Frappier's answer. We specifically at the CNSC, we use the Government of Canada secure network. All the tablets that were issued to our staff were imaged and set up by our IT folks. Our inspectors all along had remote access and they were using the secure network.

In addition to the other staff, as we phased in the distribution of the tablets collectively to the whole organization, right now everyone has a tablet. They were using a very much secure Citrix capability to enter the CNSC network.

So at all times we were protected in different layers. And right now almost all of our staff's on the Government of Canada security network.

Thank you, Madam Chair.

THE PRESIDENT: Thank you.

Dr. Berube?

MEMBER BERUBE: Yes, good morning and

welcome to everybody.

I want to get back to a little bit more business as usual, where we've been talking a lot about COVID-19. We're all very sensitive and aware that this is an issue and we're having to adjust. And I want to congratulate all the operators on so far their efforts to -- actually to address this. And it sounds like most of that, in my opinion, now is moving fairly well.

And in my opinion also we've been fortunate in Canada to not be as affected as some nations. And my heart goes out to some of those nations dealing with their crisis as it expands.

I'm just going to have a quick question here for Bruce Power with regard to what's going on with the MCR at this point. Where are you continuing with this? How is this thing muted by the pandemic response, and where are you on that?

MR. BURTON: Maury Burton, for the record. Can you hear me? It looks like my video is frozen.

THE PRESIDENT: Yes, we can hear you, Maury.

MR. BURTON: So as far as the MCR goes,

when we first got into the COVID-19, we were approximately 10 days ahead of schedule due to refuelling going better than progress -- or better than planned.

Since then, when we got into the goal to reduce the staff numbers on the Bruce site, we essentially did what we call "safe state" work, to put the unit in a safe state and basically let it -- put it in a safe state. And there were -- only essential work going on in the unit at that time.

Since then, about three weeks ago, we have started some critical path work, which includes some work to get the bulkheads installed and draining and drying of the heat transport system. Those are the two major activities. There is also a project for breathing air ongoing to increase breathing air capacity with inside the vault, and for a vestibule door to essentially have equipment come in and out of the station.

So those are really the four projects that are ongoing at this point in time. The plan is by the end of next week to start ramping up so that by the end of the month we are back at full capacity with that MCR, now that we've got our COVID response in place to ensure folks are physically distancing and to manage numbers there.

Currently we are probably about two months behind schedule due to COVID, so we will be looking to see the schedule, whether we can make that up or not.

THE PRESIDENT: Thank you, Mr. Burton.

Dr. Demeter? Dr. Demeter, I think you're maybe on mute.

Well, while we're waiting for Dr. Demeter, maybe we move to Dr. McKinnon.

Okay, I think we'll wait to hear from them.

Let me ask a question of all licensees. Have you received -- have you got any work refusals over the last three months with workers concerned about the controls you have put in place? Maybe I'll start with OPG.

MS SMITH: Yes, it's Stephanie Smith, for the record.

We have had a couple cases where staff have felt that the Ministry of Labour should be called. The Ministry of Labour has come in to I believe all three of our facilities, so that would be the Darlington site, the Pickering site, and some of our office buildings. The Ministry has confirmed that all of the protocols that OPG has put into place are correct and that our employees are

safe.

So you know, a big part of returning people back to the workplace, obviously there is some anxiety concerning, you know, the spread of the virus in the workplace. However, the programs that we have put into place, you know, the Ministry has come in and said that they are adequate. And we're just continuing to communicate with our staff and listen to our staff.

So that's it for OPG, and I'll turn it over to Bruce Power.

MR. BURTON: It's Maury Burton, for the record.

We have not had any work refusals to date that I'm aware of. There were a lot of worker concerns, obviously, at the beginning of the pandemic, particularly in areas where people are -- there's common touch points. For example, with our security entrance, it's biometric, so it's a hand geometry system that is required there. And there was a lot of concern that people -- everybody going into the station was essentially touching the same piece of equipment. So we have -- we have put in compensatory measures to deal with that, including hand sanitizer ahead of that and rigorous cleaning protocols. But we are I

think kind of in a steady state now where the workers concerns are less than what they were at the time. But we are continuing to monitor that going forward.

I'll pass it over to Jason at NB Power for their input.

MR. NOUWENS: Thank you, Maury. Jason Nouwens, for the record.

Similar to Bruce Power, we've not had any work refusals. We have had some healthy challenges from staff on questioning the protocols we have in place and our requirements on how we can effectively complete the job safely and keep the physical distancing requirements in place. But we've not had any refusals.

THE PRESIDENT: Thank you.

Dr. Demeter?

MEMBER DEMETER: Is that okay now?

THE PRESIDENT: Yes, you're good.

MEMBER DEMETER: Okay, so I just changed microphones.

I was going to ask a question about the status report on the KI pill process. COVID will be with us for a while, and I see that some of the processes obviously have been lagged because of the current pandemic.

I want to get a sense of the end date. When does the system expect the recommendations to come forth and be polished off and be available for -- because the question was raised in 2019, late 2019. I just want to get a sense of timelines.

MR. FRAPPIER: Gerry Frappier, for the record.

Maybe I'll start and then I'll ask Lee Casterton, who's our project manager, to provide some details.

So as you mentioned, the KI working group involves a lot of collaboration with civil society and with the -- both the provincial and most importantly the local health -- public health agencies. And they of course are very, very consumed now, completely, with COVID-19.

So we are looking to have some more discussions as to how we can move forward. And as far as schedule, I think it's going to depend a little bit on what we decide to do with respect to, as you mentioned, those groups will be heavily involved in COVID-19 for some time now.

But perhaps Lee Casterton can talk a little bit more about the discussions he's had with the

groups as to where they see they can support going forward.

Lee, over to you.

MR. CASTERTON: Yes, good morning, Members of the Commission. My name is Lee Casterton, and I am the chair of the KI pill working group.

Last week I spoke with the other co-chairs from Ontario Power Generation, the Ministry of Health, and the Office of the Fire Marshal and Emergency Management. We felt that based on the amount of resources required for the COVID pandemic, that at this point we wanted to delay the concurrence report. So the next major milestone for our working group is to actually send the revised report that has been reviewed by all its members to achieve concurrence. And that will trigger, then the public review period. So in light of the pandemic, we wanted to delay the concurrent step in order for our members who are primarily public health units and emergency management coordinators to focus on the pandemic response.

We did discuss last week with the co-chairs of looking to host a teleconference of all members in the coming weeks or months so that we can sit down and discuss a plan of action and come up with key milestones. And one of the key elements is the

communication strategy for the support. The Commission Members raised this previously at hearings, and that is one area that we really want to make sure in this new normal that we have the right communication strategy to get the support out to the public.

So at this point, I cannot confirm an exact date, but we do hope to have a full working group teleconference in the coming weeks, and then we should be able to inform the Commission with more details following that meeting.

THE PRESIDENT: Thank you.

Dr. McKinnon?

MEMBER MCKINNON: Yes, thank you.

Can you hear me now okay?

THE PRESIDENT: Yes, we can.

MEMBER MCKINNON: Okay. I have a question for the power operators. So in relation to the changes in the power demand and forecasting uncertainties and all of the logistical issues of dealing with the pandemic, what impact is this having on scheduled refurbishment plans and outages?

MS SMITH: It's Stephanie Smith, for the record, from OPG.

So currently, Unit 2 at Darlington, we were actually -- we're very proud of the fact that we managed to complete that refurbishment through the pandemic, and that unit is currently at power.

The Unit 3 refurbishment at Darlington, we have -- we did end up delaying that slightly. There is a single fuel channel replacement that needs to be done previous to that, and that will be started in June. So we did delay the Unit 3 single fuel channel replacement and the subsequent refurbishment. However, we do believe that coming through the pandemic and the work that we've done, that we will continue on with Unit 3. And Unit 2, as I said, is at power.

At Pickering, we did complete our Unit 1. I believe Gerry mentioned that we're currently at about 60 per cent full power. So we did continue our planned outages.

In fact, we also had a forced outages at Pickering during the pandemic, and we managed to complete all of our work safely with reliability.

So that's from OPG, and I'll open it up to the other utilities for an update.

MR. BURTON: Yes, Maury Burton, for the

record.

As far as Bruce Power goes, the impact really has been a slowdown on the Unit 6 MCR where we essentially stopped work on it for approximately two months before we started back up.

As for the other outages, we did delay Unit 5 a month.

But Unit 4, we had it continue throughout the pandemic. Really a lot of that was more around managing site staff numbers as we got a handle on how the pandemic was actually going to affect the area that we're located in.

Going forward, we don't see any major impacts. Yes, there have been -- has been reduced demand in Ontario and elsewhere due to the pandemic, but it hasn't had major impacts. We have had some situations where we've had surplus baseload generation events, which at Bruce we do a reduced power on the units typically over night. But other than that, there hasn't been any major impact at this point in time. And it's something that we're monitoring.

As for long term, we don't see any major impacts to that. We continue, as mentioned earlier, we are planning to ramp up the Unit 6 MCR back up to full capacity

within -- by the end of the month and intend to try to bring that in on time.

I'll pass over to Jason Nouwens for any input for NB Power.

MR. NOUWENS: Thank you, Maury. Jason Nouwens, for the record.

So our single-unit utility was refurbished in 2012. So refurbishment issues are not a problem for us.

However, from a planned unit outage point of view, we did originally have one scheduled to start on April 10th. We have an internal process for outage scope and risk deferral assessment. So we called that process, evaluated the reliability and safety requirements of the outage, and determined that it was safe to move that outage to start September 4th. So our new schedule will start September 4th with the same duration and largely the same scope.

Now, it will be a little bit different from a process point of view, given the physical distancing, but we have a team assigned to that that has looked at the various aspects that we will need to manage during the outage and have determined that we can execute the outage safely and effectively in the same time frame

that we originally planned.

That's all for me. Thank you.

THE PRESIDENT: Thank you very much.

Let me start off by asking staff and then maybe the licensees want to add. So to date, the Commission has not received any requests to approve any deviations or exemptions from regulatory or licensing requirements from our licensees. And I just want to get confirmation from staff that that is indeed the case, that licensees have not required any of that to date. And is there anything happening on the horizon with regards to exemptions or deviation requests?

MR. FRAPPIER: Gerry Frappier, for the record.

So you're correct. There was a couple of maybe business-as-usual requirements associated with training of certified staff that needed to be brought to the Commission's attention.

But as far as it related to COVID-19, we do expect, as noted during the industry's presentation, they have cut back on training which they're planning to restart pretty soon, in particular simulator training.

And that we do expect is going to have an

effect on the -- and they have warned us it will, on the recertification of nuclear operators and other certified staff.

That's a case where we have staff that are fully certified, but their certifications are good for a five-year period. That five-year period will come up, and because of this delay and reduction in training capability, they will not be able to fully satisfy the requirements for recertification and we will be coming to the Commission to look for an extension, essentially, of the certification period, which requires a regulatory exemption to the five-year limit.

Other than that, the work that's been done as far as rescheduling outages and MCR and refurbishment activities can all be done within the current licensing basis.

So perhaps industry might want to add a little bit as to the training and how that's going to restart since that's perhaps the issue.

MS SMITH: It's Stephanie Smith once again, for the record.

I'm going to turn it over to Jack Vecchiarelli to give us an update for OPG as our head of

Regulatory Affairs.

Jack?

MR. VECCHIARELLI: Yes, Jack Vecchiarelli here, for the record.

I think Mr. Frappier summarized this very well. There were a number of areas where, in the beginning, in collaboration with other licensees, we identified a number of areas early on in our pandemic response where we thought we might need some flexibility, and those were discussed. And fortunately, we haven't really needed to act on a number of those areas aside from what Mr. Frappier has mentioned, which will be coming forth to the Commission's attention around the certification qualifications.

Beyond that, we're on track for fulfilling -- resuming training and other activities at OPG.

And so with that, unless Bruce Power and New Brunswick Power would like to add anything more, that all from my end.

Thank you.

THE PRESIDENT: Okay, I don't see any hands up from them, so thank you for that.

Let me see if any Commission Members have additional questions.

Dr. Berube?

MEMBER BERUBE: Yes, my question is for the actual operators in general.

With the pandemic moving the way it is, we're well aware that that is causing issues with supply chain and interruptions, and it's probably going to continue for some time given that we're going to have new status quo operating platforms to address going forward.

One of the issues I'm concerned with, of course, is ongoing maintenance at the NPPs and whether or not sufficient parts are actually available through the supply chain to address this over the longer term. What do your inventory levels look like and do you see any issues with this moving forward over, say, the next foreseeable future?

MS SMITH: So it's Stephanie Smith again, for the record.

So from OPG, currently we don't really -- have seen any foreseeable issues regarding our supply chains. We have been working very closely with our supply chains, and at this point we don't see any issues regarding

any sort of inventory or parts that is going to cause any sort of effect on the maintenance of our power plants.

So we -- again, we've been working very closely with our suppliers. A lot of them are Canadian.

Some of the U.S. facilities, we have worked with them and we do have the appropriate approvals to bring our parts across the border, et cetera, so our supply chain currently is robust and we don't have any concerns.

So I'll turn it over to the other utilities for their update.

MR. BURTON: Yes, Maury Burton, for the record.

I think Stephanie covered it quite well there. We really haven't seen any real issues with the supply chain.

Probably the biggest challenge we had and have continued to have is securing sanitizing supplies due to the high demands, and that's not really a maintenance thing; it's a personal safety thing. But currently, those supplies are being well maintained and there is really no concern.

The only other thing that I'll mention

that -- that Stephanie didn't is that, as power plants, we are working together through COG to monitor these types of things that are common issues for us so that if somebody does see an issue in their supply chain that we can get the OpEx out so that everybody's aware and we can work together to solve that.

I'll pass to Jason there if he has anything to add.

MR. NOUWENS: Thanks, Maury. Jason Nouwens, for the record.

I'll just add that early on in our response, we weren't exactly sure what the supply chain impacts would be and, in particular, consumables were a big focus for us.

We had a number of very good engagement meetings with our suppliers, including establishing some requirements for them to be considered essential services so they could continue to operate.

Since then, we've had excellent support and have been able to secure all the consumables we need to operate the station, and we have no concerns in that area.

With respect to maintenance and parts, again, the critical suppliers that are required to support

us for maintenance have all stepped up and implemented operational plans to work around the requirements and are able to provide us with all the parts we need to maintain the station, so we have no concerns in that area as well.

THE PRESIDENT: Okay. Thank you. Thank you very much.

I don't see any hands up, so let me finish off by thanking the licensees and CNSC Staff for ensuring safe, reliable supply of electricity and also of Cobalt-60 during these challenging times, and also for supporting your communities over the past three months in so many ways, as we have heard.

And a special congratulations again to OPG and CNSC Staff for the safe completion of the Darlington Unit 2 refurbishment. Thank you.

The next item on the agenda is the Status Report on Nuclear Fuel Facilities as outlined in CMD 20-M16, provided in the context of the pandemic situation similar to what we just heard on the nuclear power plants.

I note that we have representatives from the nuclear fuel facilities and CNSC Staff joining us for this item. They can identify themselves later before speaking.

Ms Tadros, I understand you would like to make a few remarks before I turn the floor over to my colleagues for questions.

CMD 20-M16

Oral presentation by CNSC staff

MS TADROS: Yes, please, President Velshi. Can you hear me?

THE PRESIDENT: Yes, I can. Thank you.

MS TADROS: Thank you.

And good morning, President Velshi and Members of the Commission. For the record, my name is Haidy Tadros, and I am the Director-General of the Directorate of Nuclear Cycle and Facilities Regulation.

With me today to respond to any questions the Commission may have on the Nuclear Fuel Cycle Facilities Status Report are our four Nuclear Fuel Cycle Program Directors, who will introduce themselves when they come to speak.

Similar to my CNSC colleagues in the regulation of the nuclear power program, we are here to present CMD 20-M16, a Special COVID Update across the

various nuclear fuel cycle industry sectors. This document was finalized on June 12, 2020 and in summary, I offer three main points.

All fuel cycle facility licensees have implemented their respective business continuity plans in response to the COVID-19 pandemic and are following public health directives and guidelines.

CNSC Staff continue to implement compliance activities using a risk-informed approach, and we have safety protocols in place for the gradual return of CNSC inspectors to site inspections.

Finally, there are no safety significant issues to report and CNSC Staff confirm that licensees remain qualified to undertake operations according to their respective licensing basis.

We are available to answer any questions the Commission may have. Thank you.

THE PRESIDENT: Thank you very much.

I'll see if any of the licensees want to add anything or make a statement, starting with CNL. Ms Williams?

I don't see her there.

Cameco, Mr. Mooney?

MR. MOONEY: Good morning. It's Liam Mooney. Can you hear me?

THE PRESIDENT: Yes, we can.

MR. MOONEY: Great. Thank you for this.

I just wanted to start by echoing the comments from our colleagues for the nuclear power plants from earlier in the day, both in relation to our gratitude to those who have worked on the front lines of health care as well as those who helped keep us fed and warm throughout this crisis.

We also recognize the contributions of our own workforce, who have demonstrated their resilience every day since the pandemic began. We've actively monitored the situation and followed the guidance of relevant health authorities in the jurisdictions that we operate in.

At Cameco, we began implementing protective measures on March 2nd, including activating our local business continuity plan and corporate business continuity plan, which includes our pandemic plan.

We've increased the sanitation and cleaning frequency of our facilities, implemented site access and screening protocols, including taking temperatures, suspended non-essential work by visitors and

contractors, changed our lunch break schedule to assist with social distancing, suspended all large-group training. Sanitizing workstations has become common practice.

We have asked staff to work from home wherever possible and required physical distancing in the workplace consistent with occupational health and safety standards. Where that physical distancing cannot be maintained, personnel are required to wear the appropriate PPE, including respiratory protection.

I also wanted to speak briefly about Cameco's work in the communities since the pandemic began, including establishing a COVID-19 relief fund in northern Saskatchewan that saw us donate \$1 million to a number of community projects in Saskatchewan as well as in Ontario where we donated \$250,000 into the Northumberland County and Algoma districts, where we operate.

In closing, Cameco and our staff have and continue to safely manage through the pandemic while complying with all regulatory requirements. We remain vigilant and continue to work closely with all our stakeholders and the relevant regulatory authorities.

Our priority remains the protection and health and safety of our workers, their families and

communities.

Thank you very much for the opportunity to provide this perspective, and we're happy to answer any questions the Commission may have.

THE PRESIDENT: Thank you, Mr. Mooney.

Mr. Cotnam from CNL?

MS WILLIAMS: Thank you, Madam President and Members of the Commission. Good morning, everyone.

For the record, my name is Cynthia Williams. I'm the Vice-President of Health, Safety, Security, Environment and Quality at CNL. With me here today is Shaun Cotnam, who is CNL's Chief Regulatory Officer.

Today I'll provide you with a brief update on CNL operations and the recent measures we've taken in response to the COVID-19 pandemic to protect the health and safety of our staff, their families and our local communities while continuing to meet our regulatory obligations. I'll also discuss some of the initiatives we launched to help Canada respond to the threat of this highly-infectious virus and to better protect frontline health care workers.

First, in line with directions set out by

the Government of Canada and public health authorities, CNL reduced operations at all of our sites beginning on March 18th, 2020. This was a precautionary measure intended to minimize the risk of transmission of COVID-19 to our personnel as the virus began to spread in communities across the country while maintaining work that was necessary to keep our sites safe, ensure compliance with regulations and to deliver on our mission critical task.

During this period, a team of approximately 300 employees continued to work at CNL sites, safely performing activities that minimized risk to the public and environment. For personnel who were in a position to work from home, which represented about 2,000 CNL employees, CNL asked them to do so.

The remaining employees, those who were unable to work on site or at home, were put on temporary administrative leave. This was a large change for our company that required us to confront an entire host of logistical, regulatory and legal hurdles, among others.

I'm pleased to say that things are turning out smoothly, and I'd like to acknowledge our employees who have demonstrated creativity, flexibility and responsiveness through this transition.

Staying connected to our employees and ensuring that they were up to date on CNL business and in receipt of important information was paramount for CNL.

As we began our reduced operations, a priority was placed on remaining -- maintaining contact with all employees. To this end, CNL established an external portal for all CNL staff.

Throughout our pandemic response, CNL has continued a comprehensive communications program, making connections through our intranet, the external employee portal, web-based meetings, all staff videos, live broadcast and social media.

Likewise, the communities where we operate were also updated on our activities through the meetings, our external web site, social media and press engagements.

CNL has maintained reduced operations since that time, nearly three months ago. We have been very fortunate that there have been no confirmed or presumptive cases of COVID-19 on any of our sites across Canada.

While some of our maintenance work and commercial activities have been delayed because of this staffing situation, I can confirm that we've successfully

met our agreed regulatory requirements during this period. Our sites, facilities and, more importantly, our employees have remained safe during this unprecedented time.

Beyond our routine activities, I'm also happy to report that CNL management recognized that we had a lead role to play in response to the COVID-19 pandemic as Canada's national nuclear laboratory. We are home to some of Canada's most unique and innovative facilities, laboratories, equipment and expertise.

We saw an opportunity to apply these capabilities to help Canada respond to this pandemic, and so two special task forces were stood up to identify opportunities where CNL could supply these resources.

As part of this initiative, we also invited employees to submit ideas on the role CNL could play to fight COVID-19. We received over 350 submissions in a few short weeks.

Within this work, most notable has been the development of what's known as the Mechanical Ventilator Milano, or MVM ventilator. As I'm sure you're aware, the COVID-19 virus targets the lungs and causes complications such as pneumonia and acute respiratory distress, which has created a worldwide shortage of

ventilators.

To meet this surge in demand, CNL worked in collaboration with Nobel Prize Laureate Dr. Art McDonald, alongside researchers in Italy and teams from SNOLAB and TRIUMF here in Canada to fast-track the development and licensing of this low-cost medical ventilator.

Last month, it was confirmed that 10,000 MVM ventilators will be manufactured and delivered to the Government of Canada as part of its national mobilization effort to combat COVID-19. This is an enormous achievement by this team over the course of a few months.

In addition to this accomplishment, CNL has applied its resources to contribute to Canada's response in a wide variety of ways. Leveraging our equipment and experience in 3D printing, CNL was able to produce hundreds of protective face shields which were manufactured, approved for use by Health Canada, and donated to local hospitals and agencies.

This was made possible through the actions of several employees, who set up 3D printing equipment in their own homes and, collaborating remotely, meeting all COVID-19 protocols and successfully produced the

much-needed PPE&C.

In partnership with McMaster University, Baycrest Health Group and St. Nouveau, CNL has constructed a prototype tool that can sterilize PPE&C using UV technology.

We've developed a variety of emergency equipment, from isolation and decontamination tents to ventilation skids and drive-through tents for COVID-19 testing which has been made available to the Government of Canada and can be called upon if needed.

We've donated thousands of pieces of PPE&C to local hospitals, pandemic services and emergency operations centres in our communities and even provided training in PPE&C use to health care providers.

Our employees have also made generous donations to local food banks at our sites across Canada, and even delivered groceries to vulnerable residents in our local communities.

Overall, I'd just say that I've really been amazed at the way CNL has responded as an organization to help fight this virus and the way that our employees have stepped up to prioritize this important work.

Looking forward, as governments across

Canada begin to loosen restrictions, CNL has developed a pandemic recovery plan that outlines our phased return to routine operations. Our plan is also underpinned by an independent community risk assessment.

CNL engaged Gevity, an independent epidemiological firm, to help us fully understand the overall pandemic risk in communities where many of our employees reside.

Our managed return to operations is based on controls that have now been put in place to protect workers from COVID-19 related hazards, is risk-informed and will be guided by a series of recovery plan objectives. This is a five-phase process which gradually moves us from reduced operations back to normal.

The first phase is preparatory, which prepared our sites for personnel to safely begin the return to work. From there, we began isolated activities which we know are low risk and where it's easier to maintain physical distancing measures.

Our third phase will be a moderate level of work, but we will see some of our more routine activities resume in a modified fashion.

Fourth stage, our new normal, will see all

of our activities resume, but under strong new guidelines and restrictions.

Finally, the fifth and last phase would be post-pandemic where we resume our regular operations.

We are currently in Phase 2, isolated activities, of this recovery plan, which means that work has commenced inside construction zones and defined areas within our primary site, the Chalk River campus, and at locations such as Whiteshell, Port Hope and Port Granby.

Right now, we are working hard to ensure that employees will return to a work environment that has been assessed and modified for their safety.

We have strong measures in place to ensure that the risk of COVID-19 transmission is well controlled.

In closing, I want to be clear that the pace at which our return to work process unfolds is very much dependent on external factors, including the recommendations and guidelines of our provincial and federal governments, but also the evolution of the pandemic itself.

Overall, I want to assure you that the health and safety of our workers, their families and our local communities is the centre of every decision that we

make.

With that said, I'd like to thank you for your time, and Shaun and I would be happy to answer any questions that you may have.

THE PRESIDENT: Thank you, Ms Williams.

Let's turn over to SRB Technologies. Mr. Levesque.

MR. LEVESQUE: Stephane Levesque, for the record. Can you hear me?

THE PRESIDENT: Yes, though you may want to come a bit closer to the microphone if you can, please.

Thank you.

MR. LEVESQUE: How's that?

THE PRESIDENT: Much better, thank you.

MR. LEVESQUE: Thank you.

First I'd like to thank Members of the Commission, CNSC Staff and all other licensees, health care workers and essential workers, everyone who's tried to work hard to keep the infrastructure going in Canada and for everybody.

Being a private business like ours, it's been especially challenging for us and also having to meet our obligations to provide emergency and safety lighting to

a number of essential businesses like the aerospace industry, who needs aircraft signs from us every day to be able to carry important supplies. Building maintenance facilities, including hospitals, who need the signs to meet the Code, basically, we've had to supply, and National Defence.

In meeting those obligations, it was most important for us to find ways to be able to best protect our staff, which is our greatest asset.

We first increased the cleaning frequency in our facility, instituted a number of additional sanitizing stations. It's very early on; we did this in mid-March. Staff who had travelled anywhere outside of the country were not allowed to return to work for a period of 21 days with a -- anybody who exhibited any of the many symptoms of COVID were asked to stay home for a period of 14 days. We promoted social distancing practices. Staff have been very supportive.

We normally run 12 hours a day. We've expanded our shifts to 24 hours to be able to reduce the amount of staff on a given shift.

We have also reduced, very early on, the number of staff per any work area, lunch area, eating

period, to five so that they would maintain well over the social distancing practices.

Some of the employees are working entirely from home. Some are working from home on alternate days; some are working in the mornings from home, some in the afternoon.

We have secured PPE supplies and materials to ensure that we can continue to supply our essential customers.

And, very early on we, like other licensees, started printing, because we have 3D printing capabilities, hundreds of face shields for the local community that we donated, but that wasn't near enough. There was a big shortage in our area anyway, to be able to get face shields and other PPE like it, so we sat with local hospitals and members of local old age homes, and basically developed a plan to retool some of our facility to basically do a high production output of face shields with an injection moulding machine that we have.

So, we invested in tooling with some help with some various community futures and the Ontario Together fund.

We applied for a license from Health

Canada to actually make the face shields, which we got, and starting last week we started producing 10,000 face shields a week, mainly to distribute in Renfrew County, but abroad. We've had already 50 large orders delivered to hospitals, old age homes, and members of the public. So we're really proud of what we've been able to do during this difficult time.

We have been lucky in our area where there's only right now two unresolved cases out of only having 25 in the entire area together. But, you know, we've taken everything seriously and feel for those who have been impacted a lot greater than we have been in this small community, so my heart goes out to everyone else.

Thank you.

THE PRESIDENT: Thank you very much for that.

OPG, Saad Haseen, if you have an update for us?

MR. HASEEN: It's Saad Haseen, for the record.

Nothing to add further beyond what Stephanie Smith already provided. We have taken for the Waste Management Facilities a unified approach, the same as

the Power Reactors for OPG.

Thank you.

THE PRESIDENT: Thank you.

McMaster University, Mr. Heysel.

MR. ZIC: Well, it's Josip Zic, here, for the record, for McMaster University.

Chris is on the webinar but for some reason not connected, so I'll get started and he can chime in if he gets connected.

A few things to add, in addition, as far as an update from McMaster. We've implemented our business continuity plan. Essential staff have been on site and supporting operations and similar to the particular power plants, you know, a number of things, I'm not going to get into detail but you know breaking up into teams, having essential staff only on site, a number of measures put in place to protect staff that are on site.

I have to say we've had amazing support from not only our nuclear staff, but also security at McMaster and facility services when it comes to cleaning and support of our operations, so really good support from the university as a whole.

We have been able to continue with all of

our essential operations and have had no impact on safety.

We have also had no impact on radiopharmaceutical production which is very important for us as we are one of -- or, we are the sole supplier of ¹²⁵I which is key cancer fighting treatment.

Also, we've had some really good supply chain monitoring and haven't had any risks at this time to the materials that we need both for personnel safety and for essential operations.

I also want to mention that, as Canada's most research-intensive university, we have played a key role in virus isolation and research and development around treatment and developing a vaccine. And not only on the medical side but also being a research and development for PPE, medical treatment equipment, testing of medical grade masks, and also starting research into the social acts of this disease; so a number of areas that McMaster has been supporting.

And I see that Chris has joined and I'll let him add anything else that he may have for you.

Thank you.

MR. HEYSEL: Good morning ladies and gentlemen. Chris Heysel, for the record.

I think Jo covered everything that was pertinent to our -- things happening at the university. I'll just reiterate that, you know, our -- our focus has been on the safety of workers and the safety of our operations, and we've -- you know I need to congratulate the staff who have stepped up, altered their work schedules and have really embraced the whole idea of social distancing, good hygiene, and I think they've been champions in this area, so congratulations to the staff.

Also, the CNSC. I mean we've had a lot of meeting with them virtually; we've been making progress on a lot of different items at the university and projects, so I think their flexibility and their willingness to change with the times has been very, very useful and it should be recognized.

Thank you.

THE PRESIDENT: Thank you.

And lastly we have Mr. Snopek from BWXT.

MR. SNOPEK: Thank you and good morning President Velshi and Members of the Commission.

My name is David Snopek, for the record. I am the director for Environmental Health and Safety and Regulatory Affairs for BWXT.

Thank you for the opportunity to address the Commission on the matter of COVID.

In mid-March when the pandemic was developing in North America, BWXT immediately put in place continuity plans with the elements of personal distancing and safety, security of key supply, and planning for various contingencies.

Under the heading of personal distancing and safety, our objective is and has been to minimize the population density at the sites and ensure safety of employees that are on site. To that end, non-essential personnel have been and are working from home.

We are conducting screening of employees that are coming in. We split the shifts between day and afternoon and balanced those shifts to further minimize the number of employees that are on site at any one time.

We have staggered the start and end times of shifts to avoid congestion at the entrance and exit from a facility.

We have also staggered breaks and meals to avoid congestion in those areas.

We have limited suppliers and vendors to those that are essential only, and we screen those for

anybody to come on site.

We have, of course, implemented the two-metre distancing policy, and we've provided face coverings for employees, and we've provided them in sufficient quantities for employees to bring home for family use as they venture out into the community to do their essential errands.

We have significantly increased cleaning and disinfection for the facility.

At our larger sites we've made main hallways directional and added traffic control mirrors to avoid congestion.

Of course, we've also restricted travel.

BWXT staff have been tremendously adaptable and flexible in this exceptional period and have been able to work very successfully both in the office and remotely for those that are working remotely.

For security of supply, we've been working and continue to work with our vendors to ensure that we have adequate and supplemental key materials and supplies beyond the quantities normally held. And we've been doing the same for security and supply for key services or determining where contingencies are available and could be

implemented if the need arises. For example, we're advancing certain infrequent calibrations of equipment scheduled in the fall anticipating that there could be a potential second wave perhaps associated with increased contact with return to school.

We're planning for various contingencies including a worsening situation or a second wave, but we're also planning for an improving situation which would involve a staggered, staged, and controlled return to work for office employees.

Thank you. We are available for any questions that the Commission may have.

THE PRESIDENT: Thank you and thank you all for your very informative updates.

Let me check with the Commission Members to see if they have any questions. We'll start with Dr. McKinnon.

MEMBER MCKINNON: I have no specific questions, but I would just like to acknowledge all the efforts that the companies have made for their respective communities. It's very impressive and also heartening.

Thank you.

THE PRESIDENT: Dr. Lacroix.

MEMBER LACROIX: Yes, I do have a question for staff. I have read in the document in the CMD, that they conducted a remote inspection at the Uranium site. What type of inspection; how is it done; and, how valid is it?

MS TADROS: Thank you for the question. This is Haidy Tadros, for the record.

So, the inspection was a radiation protection inspection, and I would ask our Director for the Uranium Mines and Mills, Mr. Peter Fundarek to explain the details of how that inspection had been carried out.

MR. FUNDAREK: Peter Fundarek, for the record.

Can you hear me?

THE PRESIDENT: Yes, we can.

MR. FUNDAREK: Okay, thank you.

Peter Fundarek, for the record. I'm the Director of the Uranium Mines and Mills Division.

So, the inspection was carried out remotely after the consultation with the radiation protection specialists to determine whether or not the inspection could be conducted remotely.

There was a comprehensive evaluation of

the documents that would be required during the inspection and the list of requested documents was provided to the licensee in advance of the actual conduct of the inspection. And that facilitated the licensee to have those documents available and it facilitated the inspection by making those documents available, and it facilitated the inspection by making those documents available immediately upon the start of the inspection.

So the licensee and the CNSC inspector and the CNSC radiation protection specialist all worked through the inspection on a regular basis and evaluated the necessary materials that were provided during the inspection, and the inspection was conducted successfully and there were no items -- significant items of non-compliance that were noted as a result of that inspection.

As a follow-up to that inspection the CNSC inspector and the radiation protection specialist both noted the success of the conduction of the remote inspection and felt that it met all the requirements for a regular CNSC inspection and provided effective regulatory oversight.

THE PRESIDENT: Thank you.

Dr. Berube.

MEMBER BERUBE: I have a question for CNSC staff, or a general comment, actually. I'm looking at your document here, your CMD, most of the facilities, the remote facilities are in the staged shut-down state. A lot of the production facilities are in, staged shut-down state. So my concern, of course, has to do with monitoring these facilities primarily for security in the staged shut-down state.

As we're well aware, the financial situation is somewhat adverse for a lot of people, and as a direct result that leads to sometimes behaviours that we'd rather not see. These facilities are in the middle of no-place, and so it's very imperative due to the nature of their operation, what's inside of some of these things, that physical security in particular is being monitored and that we're actually validating that that is happening.

CNSC, could you tell me how your action monitoring compliance works?

MS TADROS: Haidy Tadros for the record.

So I will start and I will ask our regulatory program directors to provide the details for the answer to your question, Dr. Berube.

So overall, maybe an appreciation for how we look at our compliance plans as an integrated team with our specialists. So, you've heard of us speaking about the facility compliance and assessment teams. So these teams are functional teams, they are integrated with regards to both licensing a compliance views of each facility. They are facility-specific teams, and as part of these teams we have our security subject matter experts that participate in the discussion.

So when COVID started and the review of the compliance program across the fuel cycle facilities was implemented, the FACT teams, as we call them, got together and all the subject matter experts were part of the discussion around what various activities and shutdowns or maintenance delays took place at each of these facilities.

So perhaps to speak specifically to the security at specific sites that have been shut down, I would ask first for Ms Kavita Murthy to give you an appreciation for CNL and the regulatory program around security there, and the discussions. And then following Kavita, I would ask Peter Fundarek to fill in because, again, one of the main components of the COVID was for the mines to be shut down.

So perhaps, after those two examples, if you have any further questions, we'll take them.

So, Kavita, over to you, please.

MS MURTHY: Good morning. I'm Kavita Murthy, for the record.

Can everyone hear me?

THE PRESIDENT: Yes, we can.

MS MURTHY: Thank you.

So at the start of the pandemic as the Regulatory Program Director, I immediately maintained a constant stream of communication with the Chief Regulatory Officer at CNL. Understanding that all other activities were ceased at the site we wanted to make sure that there wasn't any compromise to any physical security requirements, and we on a bi-weekly basis or three times a week basis I connected with him to understand what the status was, and our understanding was that there was no compromise done to any physical security at any of the sites.

Specific details related to some of the training that is required for security to staff to maintain their certification, there were some alternative arrangements proposed by CNL, that CNSC staff reviewed and

accepted, and we had no indication of any lapses in security at the site.

And if our Director of Nuclear Security Division would like to answer, I think, for the detail, I can ask him to speak to this.

THE PRESIDENT: Why don't we move to Fundarek to see what is happening with the mines and mills?

MR. FUNDAREK: Well Peter Fundarek, for the record.

For the Uranium Mines and Mills, shortly after the pandemic response began both Cameco and Orano identified that they were -- or, notified the CNSC that they were suspending operations at their respective sites and implementing measures to ensure appropriate physical distancing.

During that period of time there was a slow shut-down of both of the sites, but even with a full shut-down, as has happened, there are still a certain number of persons on site because certain processes such as water treatment and other necessary requirements must be met, and so all of that continues to happen.

We receive regular updates from the licensees. We've had meetings with them virtually during

this time period to determine exactly what they've done and the licensees have demonstrated to us the measures that they have taken to ensure effective response to the pandemic.

They also maintain site security for the site to ensure that there are no incidents occurring, and they are monitoring their staff to assess the mental effects of the pandemic response to ensure that people are properly protected against having unnecessary anxiety as a result of this.

So there is a comprehensive response. I note that, yes, these sites are remote, but that also works in their favour in terms of limiting access to those sites.

THE PRESIDENT: Thank you.

Mr. Mooney, do you want to add anything?

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

Thanks for that question. I think, as you had indicated, for our northern Saskatchewan facilities, they are remote which is part of their direct risk vulnerability assessments taking into account the fact that they are fly in and fly out and, yes, they are accessible by road but it's a very long road to get there, so that's

definitely one factor in northern Saskatchewan.

But just going to the heart of the matter, in the staffing that we have for our sites that are in care maintenance have been in the Rabbit Lake and Key and McArthur circumstances for some period of time, security personnel on site have remained constant, so whether we're operating or we're in a state of safe care and maintenance, that we have the same number of security personnel present at our facilities.

THE PRESIDENT: Thank you.

Mr. Jammal.

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

I would like to compliment my CNSC colleagues to their response.

Dr. Berube, you asked about the physical viability. It's a regulatory requirement the licensee must inform us of any changes with respect to their financial situation. And we did oversee and review the financial guarantees associated with the major licensees, and the CNSC issued the regulatory activity plan for the cost recovery and all of our major facilities are in compliance with the cost recovery to date.

THE PRESIDENT: Thank you.

Dr. Demeter.

MEMBER DEMETER: Just a comment. I really appreciate as a front-line healthcare worker the commitments and activities related to both the community and national for the COVID response by industry.

Thank you very much.

THE PRESIDENT: Okay, thank you. Thank you to staff and to the licensees for the update and for your excellent efforts particularly in ensuring safety and the critical supply chain.

We'll take a ten-minute break and resume at 10:45. So, please be sure to stretch and move around a bit.

Thank you.

--- Upon recessing at 10:33 a.m. /

Suspension à 10 h 33

--- Upon resuming at 10:45 a.m. /

Reprise à 10 h 45

THE PRESIDENT: Welcome back.

The next item on the agenda is the January

12, 2020 false alert by Emergency Management Ontario (or EMO) concerning the Pickering Nuclear Generating Station.

We will hear a presentation from EMO on the event, followed by a presentation from CNSC staff on their response to the event.

Before turning the floor to EMO for the presentation, I would like to acknowledge that representatives from Ontario Power Generation, the New Brunswick Emergency Management Organization and Global Public Affairs (an independent consultant who prepared a report on CNSC's response) are joining us for this item. They can identify themselves later during the question period.

I will turn the floor to Mr. Teepu Khawja, Assistant Deputy Minister and Chief of Emergency Management Ontario, for the EMO's presentation.

Mr. Khawja, over to you.

CMD 20-M11.1

Oral Presentation by

Emergency Management Ontario (EMO)

MR. KHAWJA: Thank you, Madam Chair.

I am just going to request control.

--- Pause

MR. KHAWJA: Great. I have control now, so I will begin, Madam Chair.

THE PRESIDENT: Thank you.

MR. KHAWJA: So for the Commission, my name is Teepu Khawja, I am the Chief for Emergency Management Ontario, located in the Ministry of the Solicitor General.

Before I proceed, I would like to start by first acknowledging the efforts and sacrifices of our province's frontline and essential workers across a number of sectors during these unprecedented times.

With that, I would like to say thank you, Madam Chair, for inviting us to provide Commission Members, staff, as well as members of the public who may be watching with a presentation detailing the events of January 12th, 2020.

For many who may be unfamiliar, I began in this position on February 24th, which is just a couple of days before the release of the investigator's report and the province's action plan, the latter of which I am here to provide an update on to the Commission.

I am confident that the remedial actions to address the gaps in emergency alerting brought to light by this investigation will make Ontario's emergency management system even stronger and the findings from the investigation show that work needs to be done to improve the system.

EMO has already taken significant corrective action in key areas, which I will be updating the Commission on shortly, and following our presentation I would be happy to take your questions within the context of the events of January 12th, the Alert Ready System or the corrective actions that have already been taken and those that are or will be underway.

So with that, I will start.

--- Pause

MR. KHAWJA: I'm sorry, I'm just requesting control again. Great.

So for today's presentation I will start by providing an overview of the Alert Ready System and the governance and then how Alert Ready in Ontario is operationalized and then a review of the error alert and the investigation and the status of our corrective actions to date.

So for those who may not be familiar, Alert Ready is Canada's emergency alerting process. It is a public-private partnership between the FPT governments, broadcasting and telecommunication industries and Pelmorex Weather Networks Incorporated.

In terms of the federal-provincial-territorial component, it is known as the National Public Alerting System. It includes a designated official identifying a threat to the public in deciding if a warning is necessary and the content of the warning, the collection or aggregation of those messages and how to make them available for distribution, the distribution and display of alert messages to the public via those last-mile distributors and then the public receiving the alert message and taking appropriate actions.

The Pelmorex component is known as NAADS, which is the National Alert Aggregation and Dissemination System. That is the system which allows for the reception of the alert messages sent from the FPT component by the public authorities and disseminating those alert messages to those last-mile distributors anywhere in Canada. And then of course the public receives the alert messages, whether through radio, television and/or wireless devices.

Alert Ready is governed by the NAAD System Governance Council, which is comprised of organizations authorized to issue emergency alerts. So each PT government and Environmental and Climate Change Canada is a member of that Council. It also includes federal organizations, Public Safety Canada, the operator, which is Pelmorex, and then various last-mile distributors. The CEO of Pelmorex or his designate will serve as the Chair and Pelmorex is licensed under the *Broadcasting Act* and is authorized to broadcast emergency alerts across Canada and they are the ones who maintain and operate that Alert Ready System.

In terms of Council roles and responsibilities, the Council -- which you will see of which I am a member -- provides direction and advice to Pelmorex as the operator and maintainer of the system on various matters such as compliance with the common alerting protocol, user interface improvements, system security monitoring and backup technical support, reporting requirements, user and management access control, et cetera. So there are a number of things that we as a Governance Council provide advice to Pelmorex on.

In terms of Alert Ready in Ontario, so

within Emergency Management Ontario is a unit known as the Provincial Emergency Operations Centre, the PEOC. The PEOC is who is authorized in Ontario to issue alert messages on behalf of the government based on a user access agreement with Pelmorex. The PEOC monitors actual or emerging situations that have the potential to impact Ontario and coordinates a response. EMO represents Ontario on the NAAD System Governance Council, of which I am the representative, and within Ontario we have the OPP and through an agreement with us and with Pelmorex, they are the ones who issue Amber Alerts on behalf of Police Services, not the PEOC itself.

Emergency alerts are requested by authorized public officials and are then issued by the PEOC using the system. These alerts are intended to contain information relating to the nature of the threat, the area affected and the actions the public should take.

There are some constraints and limitations of Alert Ready and the content has some relevance in terms of the action plan and some of the findings of the investigation report.

Character limits for broadcast intrusive, which are for wireless texts, can have a maximum of 600

characters, inclusive of French and English, otherwise they have to be broken into separate alerts, while for TV and radio there is 900 characters.

The process for issuing alerts in Ontario. To access the Alert Ready System, the process we have in place within the PEOC is an authorized official contact. So the Duty Officer with the information pertaining to the incident within the jurisdiction requests that a broadcast intrusive alert be issued. The information we expect from those authorized officials is the type of alert, including the content of the message, the why and when the alert should be sent, the geographical areas covered by that alert, a detailed description of what actions members of the public should take in order to protect themselves.

BI alerts can be sent to municipalities, unincorporated areas, First Nations communities or the entire province and then the Duty Officers are the ones within the PEOC who enter the alerts into that NAAD System for dissemination.

The who can request an alert. Authorized officials within Ontario who can request to issue a broadcast intrusive alert through the PEOC include myself as Chief of Emergency Management Ontario, the Director of

emergency management, Ray Lazarus, who joins me today, one of our three Deputy Chiefs or the scheduled Duty Operations Chief.

Within municipalities, authorized officials include the Community Emergency Management Coordinator or their alternate or the Mayor or Head of Council. Chiefs of First Nations can make such requests as well as Chiefs of Police or Fire or other senior municipal government officials such as the CAO. Within the Ontario Public Service each ministry has a designated Ministry Emergency Management Coordinator and an alternate who can also make requests depending on the nature of the occurrence. By regulation each municipality designates one CEMC and similarly by regulation each ministry must have one as well.

There is a specific process for nuclear alerts under the PNERP, the Provincial Nuclear Emergency Response Plan, and nuclear stations inform the PEOC and protocols are followed to determine if an alert is needed.

Types of alerts that I have referenced. Broadcast intrusive, for those who aren't familiar with the term, are the ones that we would receive on our wireless devices as well as we would see on TV and radio.

Non-broadcast intrusive are the ones for TV and radio, but not on wireless devices.

Alerts can be requested and issued 24/7, 365 days a year, via the PEOC and it's up to the requester's discretion as to whether or not they request a broadcast intrusive or non-broadcast intrusive alert.

As I had mentioned previously, the OPP are the ones who enter the Amber Alerts.

So transitioning to why we are here today, first a quick review. I am not here to provide the details into the report itself, which is publicly available, but I will provide an overview and then really get into the updates to the action plan.

So, as you can see from the screen image here, there is the initial and subsequent alert which occurred on January 12th, 2020 of this year. The PEOC issued an emergency alert via the Alert Ready System to Ontarians, reporting an incident at the Pickering Nuclear Generating Station, and a second alert was issued 108 minutes later advising that it had been sent in error.

At the time of the error the Alert Ready System platform has two sites. One is a training site which allows the Duty Officers to refresh themselves on how

to issue an alert and an Alert Ready live site for issuing of real alerts.

So just in terms of the construct of the PEOC, we are a 24/7, 365-day operation, so it should be no surprise that each day is comprised of shifts, which is why we have the training site as well. The system is preloaded with templates for alert messages. Those templates are for initial nuclear emergency bulletins. They are pre-scripted. They are based on nuclear accident scenarios identified for planning basis purposes in the PNERP that I had referenced. These nuclear bulletins have been developed to issue time critical alerts in the event of a nuclear facility emergency. The templates also allow new messages to be developed based on other hazard-specific emergencies. All templates are available on both the training and live sites and the templates themselves have been translated into French as well.

At the time of the error, again, at each shift change the Duty Officer tests both the Alert Ready live and training sites during shift changes. First, the Duty Officer logs into the live site to ensure system access and then logs out and then they refresh themselves on how to issue an emergency alert by logging into the

training site. They load a pre-populated message or they write a message because it is a training site. They send out the alert on the training system and then log out. Alerts issued on the training site can't leave the system and automatically delete upon issuing.

In terms of timelines, as reported in that investigator's report, at 7:00 a.m. is when the Duty Officers began their shift. They began their shift handover protocol. At 7:23 they logged into the live system, believing they had switched to the training system. As I had described in the previous slide, first they go into the live system and secondly into the training for practice, and they selected the pre-scripted nuclear message believing they were in the training site.

The public within that same minute received a nuclear emergency alert and two minutes later the Duty Officer contacted the off-duty supervisor and explained the alert was intended for training but was sent in error.

And then you can see from the timeline here at 7:40 there is consultation by the PEOC supervisors. At 9:11 the Duty Officer issued an alert advising the public that there was no incident and no action was

required, and then within that same minute the alert was received by the public.

In terms of the investigation, some details for the Commission.

On January 12th the Solicitor General, Sylvia Jones, announced a full investigation into the alert, also on the very same day.

Three days later our Deputy Solicitor General for Community Safety directed Ontario's Provincial Security Advisor to immediately investigate the circumstances surrounding the false alert.

The scope of the investigation was to include the following areas: the sequence of events; the protocols and procedures for issuing alerts via the Alert Ready System; a review of those pre-scripted messages in the Alert Ready System; our EMO staff's training on the use of the Alert Ready System; any technological capabilities and gaps of that system; a review of the internal lines of communication by my Emergency Management Ontario staff; and the protocols and procedures for cancelling an alert, error alert.

This Ontario Public Security Advisor worked with partners in the ministry, including ministry

investigators and other emergency management professionals to conduct the investigation. The investigation was informed by conducting interviews and observing a demonstration of the system.

There is a web link here available where the report and the accompanying action plan were released publicly in February for anyone who wants to follow up and isn't familiar and wants to get into details of the investigation itself.

If you were to review that report online, the investigation's key findings, you would see the following: the alert was a result of human error and intended to be a test alert; the error occurred because the Duty Officer logged into the Alert Ready live site and believed they had moved into the training site, accidentally sending that alert; and the intended test alert did use a pre-populated nuclear bulletin reporting an incident at Pickering Nuclear. The Duty Officer was not acting on any information concerning a nuclear incident. The Duty Officer immediately recognized the error and proceeded to seek guidance from their supervisors and a new message had to be developed to communicate that initial message was sent in error and that there was no nuclear

incident.

Also, unrelated information about the Pickering Nuclear Generating Station had circulated and added confusion to senior OPS executives' understanding of the situation, which you would also find in the report. And specifically on that same day, Unit 1 at PNGS was on a planned maintenance outage and was therefore out of service, in a shutdown position, and at 1:21 there was a momentary loss of power to some equipment on this unit, resulting in an internal notification.

And then subsequent discussions with stakeholders confirmed that the minor issue at Pickering was unrelated to the alert sent in error from the PEOC, but as the investigator's report documents, that did take time to sort through those details and get those clarifications up the line.

Also, the investigator concluded that while the immediate cause was human error, there were other issues that contributed to both the error alert and the delay in issuing a cancellation and identified a number of errors for improvement, including staff and manager training, procedures by which the public is informed of an error alert, including having pre-scripted clarifying

messaging should an error ever occur again, system enhancements to minimize the potential for error, clarification of roles and responsibilities, and French language message templates and translation.

In terms of corrective action, so segueing into the updates that are the primary focus of my appearance today at the Commission, in response to the investigation the PEOC also released an action plan publicly, which is also available at that link I had previously provided, to address corrective actions related to system verification and testing, staff training and alert procedure, French messaging and translation, PEOC staffing and Alert Ready roles and responsibilities.

These areas of concerns on the following slides, as well as the actions, are available publicly and the status is in my updates to the Commission today.

In terms of system verification and testing, the Alert Ready System verification sequence was modified to minimize the potential for human error -- completed. So as I had shown on an earlier slide, previously, at the time the procedure was to first log into the live site and then into the test site. The sequence has been modified now so it's test site first and then

live. All test messages now clearly indicate that they are test messages -- completed.

Supervisors have been tasked to verify that Duty Officers are following shift change procedures -- again, completed. The Alert Ready System verification process now requires two personnel to conduct the test, previously it was just the one, and distinct login credentials are now in place for the live and test platforms of the Alert Ready System to mitigate an operator from logging into the live system by mistake. Now they are required -- now they have the two login credentials. So all of those are completed.

Staff training was another area of concern and the action plan stated that we would commit to having all Duty Officers complete refresher training on Alert Ready procedures --completed. All PEOC supervisors to undergo training on the Alert Ready System and be granted appropriate access to the system. So that is completed and ongoing.

Emergency exercise planning will include elements of critical thinking in atypical situations to test the PEOC decision-making process for effective emergency alerts and response. So that is underway and it

is underway because I view this as not being one that is a hard stop that would ever be completed, it's one that would be continuous where as we plan and participate in the exercises we will continue to identify opportunities to include those elements of critical thinking.

Another area of concern was the end alert procedure, which was committing us to implement a new procedure to ensure an end alert message is sent immediately should an emergency alert be issued in error -- completed.

And I would just say for clarification for the Commissioner, when we refer to "end alert", I am really viewing in the context of this issue, that is really clarifying alert. So I will use those terms interchangeably, and alert in the context of today's presentation really means a clarifying alert to the public should an emergency alert be issued in error.

Another area of concern was French resources. We committed to have all alert message templates, including those clarifying/end alert messages available in French -- completed. All staff at the PEOC to be provided refresher training on emergency translation procedures. That is completed and ongoing because as

staff, new staff come on board that training will continue and be incorporated. So while the action is specific to refresher training, it will also be part of onboard introductory training as well for new staff.

Staffing. The Ministry will conduct a review of staffing at the PEOC. That is underway and that would be ongoing as is similar across many organizations, reviewing and monitoring their staffing strategies.

In terms of the NAAD Governance Council, which I had given context on in previous slides, we committed to request clarification from the Council on the roles and responsibilities to eliminate any confusion surrounding who is responsible for issuing or ending emergency alerts, including those issued in error. The Ministry will request that the Council address the Alert Ready System issues identified in the report and the Ministry will recommend to the Council that the Alert Ready System be modified to require two-person verification for all live emergency alerts. So for the latter that is really automating what I had described earlier in the status update as to what we have already incorporated internally. So this would be really to automate the system for all users.

So from our perspective -- my perspective in Emergency Management Ontario, these have been completed because we have made those requests to the NAAD Governance Council that we are a member of. We actually had the meeting earlier this week and those requests and recommendations were made and the conversations continue and the discussions are underway with our partners on that Governance Council.

So in conclusion, since the false alert the PEOC has issued two alerts related to COVID-19 with no issues or concerns. So there have been subsequent opportunities to demonstrate the appropriate use of the Alert Ready System. That is no different than a number of jurisdictions in Canada have also used the alerting system for COVID-19.

In relation to the NAAD Governance Council, as I mentioned, EMO, myself personally, has brought the PEOC action plan items forward and we are in discussions interjurisdictionally and with Pelmorex on them. My commitment is, on behalf of our organization, we will continue efforts to ensure all commitments under our action plan are addressed and that a false alert scenario is not repeated.

And that, Madam Chair, is my final slide and my update for the Commission. Thank you for the opportunity. We will wait for after the next presentation for any questions from the Commission. Thank you.

THE PRESIDENT: Okay. Thank you for the presentation.

I will turn the floor to CNSC staff for their presentation.

Ms Heppell-Masys, the floor is yours.

CMD 20-M11/20-M11.A

Oral Presentation by CNSC staff

MS HEPPELL-MASYS: Thank you, Ms Velshi.

Good morning, Ms Velshi -- President Velshi and Members of the Commission.

Maybe I can ask for the presentation, please.

For the record, my name is Kathleen Heppell-Masys and I am the Director General of the Directorate of Security and Safeguards at the CNSC.

The Directorate of Security and Safeguards is responsible for the oversight of licensee emergency

programs and the CNSC's own Emergency Operations Centre, or EOC.

With me today is Chris Cole, former Director of the Emergency Management Programs Division at the CNSC, and Rhonda Walker-Sisttie, Director General of the Strategic Communications Directorate. We also have other staff available as well.

We are here to present the actions undertaken by the CNSC in response to the January 12th, 2020 false alert in the Province of Ontario, as well as to highlight what went well, the lessons learned and the areas of improvement.

We would also like to thank Emergency Management Ontario for having shared their perspective on the events of January 12th and also Ontario OPG and New Brunswick emergency measures organizations for being available for questions, along with GPA.

Slide 2.

Today's presentation will follow the outline presented on the slide.

First, we will provide an introduction and some background to the event of January 12th, 2020.

We will then move through a condensed

event timeline.

We will also present the lessons learned as a result of this event. The lessons learned were collected through two phases: a consultation with CNSC staff, first; and, secondly, an independent review conducted by Global Public Affairs, included as CMD 20-M11.A.

Finally, we will provide some concluding remarks.

Slide 3.

This section will present a brief introduction to the CNSC response on January 12th.

Next slide.

At 07:23 in the morning of January 12th, 2020, CNSC staff received a broadcast intrusive alert to their mobile devices simultaneously with the rest of the Province of Ontario and parts of Western Quebec. The alert referred to an ongoing event at Pickering Nuclear Generating Station. At the time of the false alert no CNSC staff were present at the office.

The CNSC became aware that this alert was sent in error almost immediately. However, the public was not made aware that there was no active nuclear event for

nearly two hours.

Due to the unexpected and broad nature of the false alert, the CNSC needed to begin its response immediately. This includes three groups:

The Duty Officer, who rigorously worked to ascertain the nature of the event and rapidly inform other staff;

The Communications Section, who reached out internally to confirm the validity of the event and develop the right approach to handle a false alert initiated by another organization; and

The Government Relations Section, who quickly interfaced with the broader federal government to inform them of the nature of the alert.

It was recognized later, as indicated by the Province of Ontario, that the false alert was a result of a human error during a routine system test at shift change.

A second alert was not issued to correct the false alert until 09:11, 1 hour and 48 minutes later.

The CNSC maintains a wealth of valuable information on its external website, and members of the public rushed to it for information on the morning of

January 12th. However, this created a surge and the website became unresponsive.

As a result, CNSC staff communicated bilingually through Twitter, one of our multiple communication tools, at 08:46 to confirm to the public that the alert was sent in error.

It was anticipated that there would be a surge in communication activities as a result of this event, and the CNSC chose to bring key personnel into its Emergency Operation Centre to provide coordinated support.

This was the first time CNSC personnel were asked to report to the CNSC Emergency Operations Centre outside of an exercise since the Fukushima Daiichi accident in 2011.

During the response to Fukushima, the CNSC external website became a national and international go-to source of information for its wealth of accurate and factual information.

The responsibilities during a nuclear emergency at a licensed nuclear facility fall to four main stakeholders:

First, the licensee is fully responsible to prevent, control and mitigate the accident. They are

also required through regulations to provide site information to the offsite authorities and to the regulator. This includes promptly notifying the CNSC of any situation that could lead to an emergency.

The provincial government -- the second box -- takes the lead in the protection of the residents and works closely with the local and municipal governments to implement protective measures. In particular, the province is fully responsible for alerting its citizens of an emergency and providing information on the steps to take with respect to protective measures. The licensee will keep the province informed of the plant situation while the province will keep the licensee aware of protective measures.

The regulator -- third box -- maintains regulatory oversight of the licensee's actions and disseminates information about the response from a regulatory point of view, such as the state of the facility and the messaging of responsible stakeholders.

Finally, the federal government provides support to the province as requested, assumes the role as a national coordinator, and communicates and coordinates with international agencies.

Highlighted in red are the responsibilities most relevant to the event of January 12th, 2020.

Alerting is the responsibility of the province and local municipalities. Alerting is used to make the public aware of protective measures they may be required to take through audible sirens, landline telephones, mobile devices, and more. These different alerting tools will be triggered at specific points during the progression of an event to reach target populations. In a real nuclear emergency, alerting like that utilized on January 12th, 2020 would be expected to occur well after all responsible authorities have been made aware of an event and not to such a large geographic region.

Cross-cutting these responsibilities is public communications, which should not be confused with alerting, but will occur simultaneously to it. Providing information to the public beyond what is contained in an alert, such as with a bulletin or media release, is essential and will also be performed by the provincial and/or municipal governments.

Dissemination of information is a core mandate of the CNSC. In an emergency, we would communicate

about an emerging incident and the actions being taken by the licensee from a regulatory point of view. Because of our existing relationship with the public, we would share and amplify the messages and information produced by the appropriate responsible authority. For example, during the Fukushima Daiichi emergency the CNSC demonstrated this as a world leading go-to source of information.

I will now pass the floor to Christopher Cole, the former Director of the Emergency Management Programs Division.

MR. COLE: Good morning, President Velshi and Members of the Commission.

For the record, my name is Christopher Cole and I am the former Director of the Emergency Management Programs Division.

On January 12th, 2020 I served as the CNSC Emergency Operations Centre Director in response to the false alert issued by the Ontario Provincial Emergency Operations Centre.

This section will provide a timeline of events on January 12th, from a CNSC staff point of view, occurring between the broadcasted false alert and the associated correction.

This will provide some context to the rapidly evolving event but does not include every action. Particularly significant events will be highlighted.

At 07:23 a.m. CNSC staff received the broadcast intrusive alert with the rest of the province. No separate notification was sent to the CNSC Duty Officer by the Provincial Emergency Operations Centre, also referred to as the PEOC.

At 07:29, CNSC communications staff reached out to the Director of the Pickering Regulatory Programs Division to begin verifying information.

At 07:33, the CNSC Duty Officer contacted the Provincial Emergency Operations Centre and received confirmation that the alert was sent in error.

This is significant as it represents the first point, within 10 minutes of the alert, where a CNSC staff member is aware the alert was false.

At 07:37, as stipulated in the Duty Officer procedure, the CNSC Duty Officer notified the Director of the Pickering Regulatory Programs Division of the situation by telephone.

At 07:44, CNSC staff became aware that the external website was not responding through attempts to

access it as part of the CNSC communications activities.

This is significant because it meant that one of the primary means of public communication was unavailable to CNSC staff. It also impacted the media's ability to access our media relations phone number which is posted on the website.

At 07:46, the CNSC Duty Officer contacted the Shift Manager at Pickering Nuclear Generating Station to confirm the status of the station.

It should be noted that within the first 40 minutes, Government Relations staff had been in contact with Natural Resources Canada on multiple occasions.

At 07:50, CNSC staff logged a critical incident with Rogers, the external website service provider.

At 07:53, CNSC communications staff were notified that the alert was likely sent in error through briefings with the Pickering Regulatory Programs Division staff and began working on messaging.

At 07:55, CNSC communications staff reached out to Ontario Power Generation communications to coordinate actions.

At 08:01, the CNSC Duty Officer sent a

notification to the CNSC Duty Officer distribution list detailing the situation. This notification was sent in lieu of a formal report to speed up awareness. This distribution list is made up of CNSC staff across the organization and currently includes 73 individual and shared mailboxes. This is significant as it is the first time the broader CNSC staff are made aware of the nature of the event.

At 08:06, Ontario Power Generation stated that the alert was false through Twitter. This tweet by Ontario Power Generation represents the first time the public was made aware that the alert was sent in error. Once this statement was posted to social media, traditional media began to report on this fact.

At 08:07, the CNSC Duty Officer briefed the Vice President of the Regulatory Affairs Branch on the situation, who indicated that he would then brief the President.

At 08:18, the CNSC Duty Officer and the Director of the Emergency Management Programs Division discussed the possible partial activation of the CNSC Emergency Operations Centre to provide needed support to staff.

At 08:22, the Director General of the Strategic Planning Directorate interfaced with Natural Resources Canada to inform them that the alert was sent in error.

An hour after the false alert, the rapid frequency of activities began to slow down. By this time, the majority of required CNSC staff were aware of the situation and working in the background responding to the event.

At 08:40, CNSC communications responded in writing to a media inquiry from the New York Times.

At 08:42, the decision to activate the CNSC Emergency Operations Centre was made by the Director General of the Directorate of Security and Safeguards.

The CNSC Emergency Operations Centre was activated to provide coordinated support to staff already working remotely to respond to the ongoing communications event.

At 08:46, the CNSC tweeted, in French and English, that the alert was sent in error. This is significant as it is the first public communications made by the CNSC on January 12th.

At 08:51, the required CNSC Emergency

Operations Centre staff were notified by the CNSC Duty Officer of a partial activation. Staff were now on their way to the Emergency Operations Centre at 280 Slater Street.

At 08:59, the CNSC posted, in French and English, on Facebook and LinkedIn that the alert was sent in error.

At 09:11, a second broadcast intrusive alert was sent by the Provincial Emergency Operations Centre notifying the public of the error. As with the first alert, this was received by CNSC staff's mobile devices.

After the broadcasted alert correction, the CNSC Emergency Operations Centre became active and performed activities related to the dissemination of information throughout the day.

At 10:29, the members of the Commission were made aware of the event details.

In this section we will discuss some of the areas that worked well and some lessons learned related to the events of January 12th, 2020.

There were many things that worked well on the morning of January 12th, despite the fact that the

alert, being in error, did not come through the expected channels. Staff relied on their experience and training to perform their required activities.

The CNSC Duty Officer responded quickly after receiving the alert on his personal device, discovering the nature of the event and advising key CNSC staff of the false alert within 15 minutes.

Communications staff self-organized, connecting with their management and subject matter experts to verify information and offer support.

The Emergency Operations Centre was partially activated and staffed, despite the circumstances, that being an early Sunday morning during an ice storm.

Through the Government Relations Section and Emergency Operations Centre Coordination Section, all partner organizations were informed, including Health Canada, Public Safety, Natural Resources Canada, the Provincial Emergency Operations Centre, the United States Nuclear Regulatory Commission and the International Atomic Energy Agency.

CNSC staff have identified Lessons learned in four categories specifically related to the false alert of January 12th, 2020.

First, the CNSC was shown to be a trusted source of information for the public, but the external CNSC website was unable to cope with this surge in demand. While the CNSC external website has previously sustained large demands and remained responsive, such as during Fukushima, the false alert meant that there was a large increase in requests over a very short period of time.

Second, regardless of who is responsible to communicate information, it is essential that the public is informed more rapidly. There are three key takeaways:

The immediate actions will rely heavily on remote staff, such as the Duty Officer and the Communications Section, who will require earlier coordination.

The CNSC Emergency Operations Centre functions on the premise that we perform actions "within our own lane", that is to say we do not perform the actions for which another organization is the responsible authority. A well-defined protocol is needed in the event a responsible authority is unable to quickly respond to a communications event.

The CNSC's training and exercise program would benefit from considering a wider variety of

non-nuclear events, including communications-focused false alerts.

Third, there is value in the perspective of a third-party review to support continuous improvement.

And finally, based on the surge of requests to the CNSC website on the morning of January 12th and the ensuing high rate of requests to Ontario Power Generation for Potassium Iodide pills, it is reasonable to assume that the false alert led to an increase in fear and perceived risk. We do not have research to quantify this impact and fully understand how widespread and to what degree fear and perceived risks were increased. Given this, the CNSC and federal government partners need to better understand the fear and perceived risks of the public and Indigenous peoples with respect to nuclear technology.

To provide additional information from the perspective of the CNSC communications team, I will now pass the floor to Rhonda Walker-Sisttie, Director General of the Strategic Communications Directorate.

Thank you.

MS WALKER-SISTTIE: Good morning,
President Velshi and Members of the Commission.

For the record, my name is Rhonda Walker-Sisttie and I am the Director General of the Strategic Communications Directorate.

An important part of the CNSC's mandate is sharing information. The public have a right to know how we as the regulator are overseeing the nuclear industry to keep people and the environment safe. We value the trust that people put in us and recognize the importance of maintaining that trust.

As we have discussed here already today, the responsibility for the January 12th false alert rests with the province and they have done their due diligence to investigate and update their system to ensure this can't happen again.

We also recognize the negative impact of an information vacuum. Our communications staff understand crisis communications. They have the expertise and judgment to find the right balance between speed to post and accuracy and always work to alleviate uncertainty in a timely manner.

Our first principle is to reach out and work with our provincial partners and nuclear operators to ensure a coordinated approach to informing the public.

However, if that isn't possible for some reason, we will step forward. On January 12th, we did just that and communicated the false alert before the province issued its correction.

We know that preparedness must be evergreen and are taking action to improve our readiness. All actions identified through our own internal review and that of an independent third party have been completed already or are underway.

We learned some valuable lessons, which have been validated by the results of the third-party review conducted by Global Public Affairs. We are already implementing changes to improve our readiness.

Immediately following the January 12th false alert, we instituted an interim on-call roster for communications and linked it to the Duty Officer notification list of "responders" to ensure the most rapid notification and response possible. We are actively staffing the communications team to support a formalized and sustainable on-call system for after hours. This on-call roster will be formally integrated into the Duty Officer process by the end of the calendar year.

We expanded the number of staff trained on

our social media system, as well as the kinds of pre-approved messages we have in the queue. This will help us communicate more swiftly with those messages as the base.

We have addressed a recommendation from Global Public Affairs to strengthen mechanisms to deal with mainstream media in a crisis. It is important to note that we do have media following us on Twitter and we successfully responded to several media calls the morning of January 12th. However, to ensure a direct connection with traditional media, we have developed a separate media contact list that will allow us to tailor and proactively target information to newsrooms and editors to coincide with our social media.

Another finding from the Global Public Affairs review that matched our own was the need to update our procedures to reinforce our response for smaller events, including non-radiological ones. We will test these procedures in an upcoming tabletop exercise, in addition to the full-scale exercises that we fully participate in annually.

Finally, I am pleased to report that we have successfully engaged the on-call roster twice since

January 12th, to respond to the heavy water spill at Bruce on March 28th and a fire at the Blind River Refinery that occurred after hours on Friday, April 24th.

In both cases, we used our pre-written social media posts as the base and then added on subject-matter expert confirmed event details. This allowed us to quickly adjust the content, update the translation and get our initial post out rapidly.

We are confident that we have strong base tools and processes in place and these allow us to evaluate each situation using our experience, expertise and training, and to communicate the right message effectively in a timely manner.

I will now pass the presentation back to Kathleen Heppell-Masys.

Thank you.

MS HEPPELL-MASYS: Thank you.

The six lessons introduced in slide 14 have been listed here, along with the actions intended to address them and their status. As with any emergency related activity or exercise, the CNSC has also compiled actions to more generally optimize our policies and procedures, which are not listed here. Actions will be

tracked to completion through the CNSC's Harmonized Plan Steering Committee.

The external website surge capacity was insufficient to handle the interest a nuclear event may generate. To address this, immediately following this event, the website was improved to roughly four times the capacity available on January 12, with upgraded and expanded infrastructure.

It is critical that staff with an immediate role are able to respond as fast as possible. Staff now have the technology needed to work remotely before moving to 280 Slater. The requirements of working during a pandemic have expedited this action. The interim communications on-call roster and process will be formalized, exercised, and linked with the CNSC duty officer program by the end of this year.

This event has demonstrated the need for a protocol in the event that timely actions of the responsible authority are unavailable. The CNSC will engage partner organizations, including the provinces and operators, to establish a communication protocol by April 2021. This will include the premise that public communications cannot be allowed to be delayed more than 30

minutes after an event of public concern.

In general, our training and exercise program can be expanded to encompass more variety of events to be better prepared for unique situations such as this. The CNSC has recently revised its exercise plan and will continue to leverage stakeholder exercises and internal tabletop exercises to include further variety. This includes cold starts and communications-focused incidents. On May 14, 2020, the CNSC conducted a cold-start remote activation drill to test our readiness with respect to our reduced shift complement pandemic plan.

There is also value in a third-party review to support continuous improvement. The CNSC commissioned an independent review, and the recommendations of this review strongly align with those of CNSC staff. The CNSC has created an overall action plan incorporating the recommendations of Global Public Affairs and CNSC staff. All actions are complete or underway, targeting completion by April 2021.

It is clear from this event that the fear and perceived risks of nuclear technology is not fully understood. By April 2021, the CNSC in collaboration with other federal agencies will develop a strategy that will

allow us collectively to better address the fears and perceived risks of members of the public and Indigenous peoples with respect to nuclear technology.

This section will provide some concluding remarks.

To summarize the discussion today, I would like to present some important reflections on the event of January 12, 2020.

CNSC staff responded to a unique event that caught wide public attention and demonstrated their ability and initiative to act.

CNSC policies and procedures are designed for large nuclear power plant events. CNSC staff relied on their training and adapted existing plans to make them work, and in doing so demonstrated our readiness to respond.

The CNSC will apply lessons learned so that we are better prepared to respond to non-nuclear emergencies or indeed any emergency that may require a CNSC response.

Communications staff will be available after hours so the CNSC is always ready to rapidly share information and alleviate uncertainty, ensuring public

trust is preserved.

The current realities of the global pandemic have further improved our ability to quickly respond to an event through enhancing our remote connectivity and improved access to the network.

The CNSC is ready to respond. CNSC staff were able to activate the CNSC emergency management systems in a timely and efficient manner in some of the worst possible conditions. The CNSC has demonstrated its readiness for a large-scale event and will work to improve its rapid response to other types of events, nuclear and non-nuclear emergencies.

The CNSC will continue our strong partnerships with key external stakeholders to ensure all possible events are met with a coordinated government response.

This false alert has provided a wealth of opportunities for learning, and CNSC staff are committed to continuous improvement and will always take the opportunity to learn from our experiences.

As demonstrated by events past and present -- including during the Fukushima Daiichi accident, where the CNSC demonstrated its ability to provide factual

and credible information to reassure Canadians, and during the current pandemic for its agility in operating remotely -- the CNSC is committed to increase its resilience and agility in the face of a variety of scenarios.

Thank you. This is the end of our presentation. Staff is open for questions. Thank you.

THE PRESIDENT: Thank you for the presentation.

I also want to acknowledge that we have with us today Adrian Foster, from the Municipality of Clarington, as well as Kevin Ashe, the deputy mayor from the City of Pickering, who will be here to answer any questions that the Commission Members may have.

So why don't we turn to questions. And Dr. Demeter first, please.

MEMBER DEMETER: Thank you very much.

First of all, I have to say this is a very troubling event. The core purpose of EMO is to be able to manage and risk-communicate in a timely fashion. That's their whole purpose. It's like being a bakery; if you can't bake bread, you're not really doing your function.

What concerns me is that some of these

gaps that lessons learned were not identified through team QC/QA audits or exercises. For example, the Global Affairs found that they maintained an alert procedure but did not find any record this procedure was enacted. There was no templates to the end alert procedure. Some of these very basic things about risk communication and dealing with management were not present and were not identified in any procedures, exercises, or audits to date.

So my question to EMO is what else is there that needs to be identified as a gap? Because we've got this human error which resulted in -- not in a perfect storm situation, a human error which resulted in the inability to manage miscommunication. So I want to know what plans you have to look at this more broadly to identify other gaps. That's to EMO.

THE PRESIDENT: Mr. Khawja.

MR. KHAWJA: Thank you. Teepu Khawja, for the record.

I'd like to acknowledge the Commission Member's question. Thank you for that.

At this point, I think in terms of the action plan itself, it's public. We recognize that there were opportunities to improve our internal procedures and

policies, and we've undertaken those. So I don't think that at this point I have much more to add in terms of other gaps that we aren't aware of.

This was the first error alert that had been issued in the province, so we have beyond that a pretty solid track record in terms of issuing alerts. And this, as you said, was human error. And we've improved the processes and internal procedures as best we can in terms of reducing and eliminating such human errors going forward.

And as for my presentation, we are also continuing to work with the NAAD governance council to ensure that beyond our internal policy and procedure improvements to prevent this, that there's also automated solutions going forward to avoid any such scenario again related to human error alerts.

Thank you.

THE PRESIDENT: Mr. Khawja, maybe I can add to Dr. Demeter's question regarding the scope of your investigation, which was very, very narrow on just the false alert and not on any other broader issues. But my question was more on -- even as I look at your corrective actions, it's very much on how does one prevent these false

alerts from happening in the first place.

And what was not clear to me from your presentation was what took so long to correct the false alert? And I know you've talked about training and you've talked about automation. But tell me a little bit about the decision-making that required 108 minutes before an alert where the duty officer knew immediately was false to get rectified. And what is being done around the whole decision-making process to make sure that there isn't this vacuum for this period of time?

MR. KHAWJA: Thank you, Madam Chair. I would say that in response to your question, in terms of our appearance here at the Commission, it was very much in terms of providing an update on the status with the -- our action plan.

Having said that, as per my presentation, you're right, I did identify the independent investigator's report that's available online, and I would offer that. Online, it goes into very detailed timelines and commentary and the results of their investigation, which didn't involve our staff. And very much so the action plan is in response to address that, including internal communications.

Without going into the details of the report itself, which we had no involvement in because it was an investigation of Emergency Management Ontario as opposed to by Emergency Management Ontario, I would offer that some of the action plan items themselves address some of the internal issues that were identified in our report, such as the back-and-forth between staff, supervisors, along with Pelmorex in terms of whether or not a cancellation -- the alert had expired and whether or not there was a cancellation alert process in place or messaging. And as I said in my presentation, while the action plan refers to "end alert," I use it interchangeably with "clarifying alert." So in terms of the internal processes and decision-making that led to that delay between the initial and the clarifying alert, it's well documented in the report.

Some of the action plan items, you're right, it's about reducing the human error itself and doesn't speak to the internal decision-making. But some of it does, like clarifying roles and responsibilities with Pelmorex, in terms of what to do and who's the decision-maker to issue an alert, because there were time delays associated with that that's documented in the

report. And there are also decision-making with the senior officials within the Ontario Public Service. And there -- so it's all well documented there. And those are internal discussions and procedures that, while not an action plan, are internal to government. And we have strived to ensure that quick and timely decision-making can be made.

But the focus is on this was human error as opposed to decision-making internally. And our focus was on ensuring that human error doesn't occur again. Thank you.

THE PRESIDENT: Dr. McKinnon.

MEMBER MCKINNON: Thank you. I'd like to start the questions based on my own experience, because I received the alert on my cellphone while I was halfway around the globe in the southern hemisphere. And so, you know, naturally, receiving the notification of a nuclear incident was fairly alarming to say the least. However, this seems very much at odds with the message stating that no action was required.

So my question to EMO, given the public perception of nuclear incidents and the reaction that the alert had, has there been any consideration of requiring any extra level of verification before issuing a nuclear

alert? And of course I recognize this must be balanced with needing a timely response.

And secondly, has the wording for the nuclear incident been reviewed, and was CNSC involved in this? Because again, stating that there was no action required, that actually created an information vacuum, as has been noted in the presentations already. Thank you.

THE PRESIDENT: Mr. Khawja.

MR. KHAWJA: Teepu Khawja, for the record.

Thank you, Dr. McKinnon. So I assume you're referring to the first alert -- sorry, the second alert about no further action is required. So in terms of that --

Sorry, for your first question about the verification itself, so as part of our action plan itself, we did speak to how internally we're requiring -- and ours was very much about testing sites and live sites and in terms of having that separate log-in credentials, a two-step authorization or review process before an alert gets sent out. Also having supervisors have the ability to get into the system as well. So internally there have been improvements made to that point. And that's for the testing procedures. The procedures are -- for actual

nuclear alerts are outlined in the PNERP.

And if I can offer, I would like to refer to my director, Ray Lazarus, for a moment, just to speak to any involvement by CNSC in terms of the drafting of that clarifying alert that you referred to. But so I will just turn it over to Ray for one moment if, Ray, you're able to speak to that point.

MR. LAZARUS: Good morning, President Velshi and Members of the Commission. My name is Ray Lazarus, director of Emergency Management, EMO, for the record.

Thank you, Teepu. With respect to the clarifying message, no, there at the time was not an engagement of CNSC with respect to the crafting of that message or the issuing of that clarifying message. Thank you.

THE PRESIDENT: Dr. McKinnon, do you have any follow-up question?

MEMBER MCKINNON: Yes. My second part was more in the sense of has there been a review of the current messaging for future going out. You know, we know what the first message was, but in connection with the impact that the messaging can have and the potential of it creating,

you know, an information vacuum, has that been examined in crafting future messages?

MR. KHAWJA: Yes. Teepu Khawja here for the record. So thank you for that, Dr. McKinnon.

I would offer that the clarifying alert that had that message about no further action required was not one of our templated ones. So the initial one was templated. That was as one of the scenarios through the PNERP. The second one was customized. So as Ray said, there was no engagement of CNSC staff in the development. And then there was, as documented in the investigator's report, there's the internal discussions as to who was involved in terms of developing and issuing that.

Having said that, we do now have as part of our action plan items is not necessarily specific to nuclear alerts, but generally speaking, if an error alert was to be issued again in the future, an actual ready-made templated clarifying alert to clarify it was sent in error -- which we did not have a template of beforehand.

Ray, if I could defer to you for a moment to see if you have anything else to add on that point before we turn it back over to President Velshi.

Sorry, you're on mute, Ray.

MR. LAZARUS: Sorry thank you. Yes, Ray Lazarus, for the record. Thank you, Teepu.

With respect to the wording of nuclear incident messages, I would just add that these have been reviewed by all stakeholders, though not including CNSC. So provincial, municipal, and facility stakeholders have reviewed the messages that we have templated. Thank you.

THE PRESIDENT: So it may be a good time to ask Mayor Adrian Foster first and then Kevin Ashe on their perspective on the alert, the impact they believe it's had around public trust and risk perception, and their level of comfort with the Province's investigation and corrective action plan. So a long list there, but we'll start with you, Mayor Foster, please.

MAYOR FOSTER: Thank you, Madam President, and Members of the Commission. It's Mayor Adrian Foster, for the record.

There is a bit of a list.

Firstly, for the seriousness with which you have taken this, you did a survey, have reached out. CNSC did that to a number of leaders. I thank you for that, and again for the Province's investigation. We will give you some thanks on that.

Now, I'll bring the perspective of the Canadian Association of Nuclear Host Communities. So certainly this came up during our AGM as well and then in dialogue with mayors.

So if you see me glancing away, certainly I had some notes I have written. And then in no particular order, it's my experience -- it's similar to many other people's experience -- I was at my desk when my phone alerted me that there was an issue. Within about five minutes, my staff alerted me that they had seen that. I reached out to Mayor Ryan and I'm going to say within 10 minutes was aware that it was a false alert.

You spoke earlier to staying within your own lane. I can tell you that the frustration of our Communications staff, knowing that this was a false alert but not having the ability to get that out, was huge. So we did not believe that it was our message, nor without formal notification that it was a false alert could we put anything out there. So I had the word of Mayor Ryan, which you know we couldn't doubt, but we did not have anything formal. And with some of formal alert, certainly the ability to respond to some of the people that were maybe trying to get on the CNSC's website, we could have staved

that off, as the other municipal partners would have as well. And Deputy Mayor Ashe, I'm sure, will weigh-in on that.

From CANHC's point of view, we know that a nuclear incident anywhere impacts any host community around the world, you know, certainly something in terms of Ontario. So it was problematic from a social media point of view in that people were reaching out on social media looking for explanations that we did not have.

So I would encourage, moving forward, when you look at the stakeholders is, you know, as soon as you can, get that information be it to the mayors, be it to, you know, our fire chiefs that we have that on hand and we can appropriately respond to people who have significant concerns with that.

I'm still a little and my staff certainly at the time a little confused as to who is the responsible authority on one side or the other. So we've got PEOC, PMO, CNSC, and exactly who -- you know, where the role fits in.

And then I would leave -- and I'm being as brief as I can here, sorry if I'm going quickly -- I would leave very quickly that if you read the report that was

prepared for the Province, I personally have some concerns with Pelmorex's involvement in communications around a potential nuclear event. So that part of the report, that was frankly a little bit disturbing to see their impact on possibly persuading staff not to give information out on a more timely basis because of fatigue from people getting those. I'm not convinced that that was a good decision, and I'm not convinced that Pelmorex should have that ability, given the nature of the emergency.

And with that I will stop and again thank you for this opportunity.

THE PRESIDENT: Thank you, Mayor Foster.

Deputy Mayor Ashe, do you have anything you'd like to add?

MR. ASHE: Thank you very much for the opportunity. My name's Kevin Ashe. I'm acting mayor of the City of Pickering. Deputy -- Mayor Ryan is on medical leave and hopes to be back later in the summer to get back in the chair.

Mayor Ryan was in the Mayor's office when this event happened in January. Mayor Foster did mention that they did have a conversation between the mayors shortly after the alert went out. We were able to confirm

at the City of Pickering because of an email sent to all members of council from our fire chief shortly after the incident of it being a false alarm. So we had some comfort that there wasn't any threat to public safety.

We remain concerned about the lack of public and official response for 100 minutes or so. Notwithstanding the fact that we internally knew there was no public risk, that information was still difficult to share on a Sunday morning to news media and our community.

So OPG has been a great community partner with us. The province has been a great community partner with us as well.

So we thank you for the opportunity to share our view of things, and we are confident about OPG's and the provincial government's ability to protect public safety. However, there's lessons to be learned about the need for a faster response than 102 minutes because there was some anxious people in our community.

I was out of town, out of country, and I never got the response, but I sure got the phone call from my stepdaughter informing me. But I was in position because the Fire Chief had sent me an email indicating that there was no threat to public safety.

So thank you for giving us the opportunity, and I'm sure Mayor Foster and I could address any questions that the Commissioners may have.

Thank you.

THE PRESIDENT: Thanks very much for that.

I have a quick question for you. Did the City of Pickering's web site have a pop-up message saying, "This alert is false"? And I think that may have actually happened before the province issued the correction.

DEPUTY MAYOR ASHE: I don't know as a matter of fact that that did occur. I know we did -- it was a Sunday morning. Access to staff in social media mediums is challenging at that particular period of time. But I think we did, in fact, have some type of notification through our social medias before the official public notification 102 or 104 minutes -- I forget what -- the exact number.

So we did take it upon ourselves to start the process of communication with our community. But again, we're concerned about the delay in the official notification.

THE PRESIDENT: Thank you.

Turning over to Dr. Lacroix, please.

MEMBER LACROIX: Yes. Thank you all for intervening on this matter.

I totally agree with Dr. Demeter and Mayor Foster when they use the word "troubling". It's a troubling event.

When I read the various CMDs devoted to this matter, I was first upset at the fact that such an insignificant glitch or event could trigger a series of action and reaction that went all the way to the provincial government and the Solicitor-General asking for a public inquiry on this matter, and I was also sad in a sense that it has shaken my trust in the authorities. Not so much about the technology itself or the qualification of various people, but the way we communicate.

I could not help thinking that we as a species have never been so inter-connected, and yet we don't know how to communicate properly.

So it seems to me that the technology has overpassed our ability to communicate properly, and this is an aspect that we should look into because I reiterate on the fact that it was an insignificant, almost an event that could have been, you know, corrected right away and it did generate and it highlighted the fact that we do not

communicate properly.

So this is kind of troubling to me.

That was my general comment.

THE PRESIDENT: Do you have a question you want to have with that?

MEMBER LACROIX: No, I do not have a question. It has already been answered by Mayor Foster and Deputy Mayor Ashe.

THE PRESIDENT: Thank you. Thank you, Dr. Lacroix.

Maybe I can just follow up on Dr. Lacroix's statement. And I'm not sure by the CNSC Staff, maybe it's OPG, whether it's the municipalities.

Can you comment on what kind of impact this did have on the public, whether it was on the number of queries you received, whether it was on the number of KI pills that were asked in any subsequent community events that you've had? I still to this date when I meet people mention this alert to me, so even though other, more serious events have come and overtaken, it's still in people's memory.

So maybe I'll start with staff and then -- and then maybe move to OPG.

Staff?

MS HEPPELL-MASYS: So I will pass -- thank you for the question. We do have statistics on this, on those questions, Ms Velshi, so what I will do is I will pass this on to Rhonda Walker-Sisttie, who can provide those detailed -- this detailed analysis.

MS WALKER-SISTTIE: Thank you. Rhonda Walker-Sisttie, for the record.

It's important to note that the CNSC was not the main topic of conversation on social media that morning.

So we were still monitoring and paying attention. We did not observe a wave of panic. What we saw was confusion and also humour. We saw the emergence of Homer Simpson in terms of the broadcast of the false alert.

People were seeking answers from the Government of Ontario and from OPG. And after the event, we did analyze the tone of the social media and our analysis showed that it was -- the experience was predominantly frustration, but not fear.

For our own perspective, we did respond to several media calls and were able to confirm the information, that the alert was false, and the media didn't

have follow up with us after that.

And I can answer any further questions if you would like. Thank you.

THE PRESIDENT: Thank you for that.

OPG, anything you'd like to add to that, please?

Mr. Burns, perhaps we'll start with you?

MR. BURNS: Sorry. I was just taken off mute.

Good afternoon, Commissioner Velshi. It's Scott Burns, Vice-President of Security and Emergency Services at OPG.

I'll just speak to your question specifically about the response in terms of KI pills. And we also have Jennifer Knox, Director of Stakeholder Relations, on the line as well who can talk about OPG's interactions with community as a result of the event on January 12th.

But yes, immediately after the event, we saw an uptake on our "Prepare to be Safe" web site which we partner with the Region of Durham and the City of Toronto in providing KI pills to the community at their request over and above, you know, our requirement to pre-distribute

KI pills in the primary zone.

So that web site has been up and running since 2015. We would average approximately 12,000 orders per year, and within a few weeks we exceeded the demand for pills over that four-year period, so we had a surge in requests of about 60,000 pills.

It impacted our ability to supply them in the time that we generally promise the community, and we had some delays as a result of COVID as well. But we will have all of those orders filled by the first week of July.

I'll now turn it over to Jennifer Knox to talk about some of the communications with the community.

MS KNOX: Thank you to Members of the Commission for this question. It's Jennifer Knox, Director of Nuclear and Stakeholder Relations, for the record.

Our response to the false alert was all-consuming in our department for the days and weeks that followed. However, as with any event, there were opportunities presented to us as well from those initial challenges.

In terms of communications efforts, for those who reached out either by visiting our information centre, calling or seeking questions on social media, we

were able to provide them with the reassurances that they needed that there was no cause for alarm.

We were also able to provide and share with them some information about our top-performing nuclear stations, the many measures in place to ensure their protection and safety as well as to share information about potassium iodides and the provincial and regional emergency plans that are in place and well practised.

In terms of trust, the event really reaffirmed the importance of establishing strong, ongoing relationships with the community stakeholders, indigenous communities and the public at large.

In most cases, these stakeholders with whom we work with extensively in our community as well as our neighbours adjacent to the stations understood relatively immediately that it was a false alert due simply to the manner in which it was received and their understanding of OPG station and emergency notification systems.

That said, OPG has continued in the days and weeks since to provide continued clarifications on the day's events through a variety of means, including through traditional and social media.

THE PRESIDENT: Thank you for that.

So maybe I'll ask a follow-up question to you. So OPG was one of the first organizations to publicly go with clarifying that this was a false alert. I think you were like 43 minutes after the first alert went out.

And a few folks have already mentioned about needing to stay in one's own lane, and certainly when it comes to nuclear emergencies and response that absolutely makes sense, but here where folks knew immediately that this was not a nuclear emergency, that this was a false alert, tell me a bit more about staying in one's own lane and did that restrict you from going out with a response sooner?

Is 43 minutes something you're satisfied with or would it be different in the future?

MS KNOX: Thank you, President Velshi.

Go ahead, Scott.

MR. BURNS: Yeah, Scott Burns, for the record.

So I would respond to that. So certainly we are not satisfied with the 43 minutes although what I would say in the time that you're responding to this and working together collaboratively as a team in the response,

that 43 minutes goes by fairly quickly, but also seems like an eternity.

So no, we weren't satisfied.

I would say that, you know, our relationship with our off-site organizations did play into our evaluation of timing of messaging. Upon, you know, reflection, yes, I think everything we've heard today is, you know, we can all do better here as organizations responding to unexpected events like this.

So we would have liked to have got out there earlier.

I would say that we were in touch with the PEOC within minutes as well and confirmed that it was an error and that we were requesting a retraction and allowing the province, you know, the time to initiate that retraction.

And as the minutes went on, you know, we just felt as an organization we also needed to make a decision and get a message out there, so yes.

No, we weren't satisfied, Commissioner Velshi, with the time that expired and would agree that we, along with others, need to do better around communications in a scenario that, typically, when we do our full-scale

exercises, come up.

We do mock communication focus groups with social media and, you know, continue to insert those into our exercise -- exercises that we do at the required frequency under regulation. And it's demonstrating opportunities for improvement in that area.

THE PRESIDENT: Thank you. Thank you for that.

I see Mr. Cameron's got his hand up.
Do you wish to add something to what's been said?

You may be on mute.

MR. CAMERON: Can you hear me now, President Velshi?

THE PRESIDENT: Yes, we can. Thank you.

MR. CAMERON: I'm sorry. I'm sorry about that.

No, just I appreciate the interventions.

Sorry, President Velshi, Members of the Commission, my name is Jason Cameron, Vice-President of Regulatory Affairs, for the record.

Just on this issue of timing and response and minutes matter in the environments in which we're

operating, in October of 2018 I chaired an international conference that looked specifically at emergency preparedness and response. And there was a notional timeline that was agreed upon within the international community that, in the hyper-connected world that we live in at the moment, 30 minutes is the outside -- you know, the outside limit when an authority should be speaking on this matter.

So I just wanted to echo what Mr. Burns had said, and that's why we reflected back, too, in terms of the way in which we responded on January the 12th and all the actions that we had taken afterwards. And I just wanted to emphasize that there's that 30-minute window which has been sort of set as a bit of a standard internationally after that conference in 2018.

Thanks, President Velshi.

THE PRESIDENT: Thank you. Thank you for sharing that.

Mr. Berube. Dr. Berube.

MEMBER BERUBE: Thank you. I've got a couple of comments and observations on this.

First of all, you know, it's unfortunate this has happened. And on the outside of it, which I think

has been expounded upon at length in the last 15 minutes or so, but I want to talk about what has happened from this is that it's been a tremendous opportunity to learn without actually putting anybody at severe risk. Though there has been some risk of confusion and maybe other things, but fundamentally, I think the timing of this event has been fortunate because of the fact that it happened Sunday morning, which most people are home in their beds and there was no wide-scale panic. It could have been much worse if it was 2 o'clock in the afternoon in Toronto when people don't know what's going on and if this would have been a delay that long, it could have been much, much worse than the situation was it is.

It also exposed basically, you know, our issues with accessing people during off hours. And I think that's a serious thing that we have to look at in terms of emergency alerts and response.

And I think from a learning ability, this thing has been very, very useful and I want to congratulate everybody on mining the heck out of this and trying to pull as much as we can out of it to try and set up a system that's more robust.

One of the factors that we mentioned here

already this morning has been that paper exercises don't work. I think that's been highlighted very well because they're just artificial.

This was a real deal, it gave us an opportunity to look at what happens in a real scenario even though it was ultimately a false issue, but still, it gave us an opportunity to look at the widespread impacts of how people are going to perceive a real issue. And I think that's been very, very valuable for us, and I think the international community's going to benefit from that as well.

We've obviously made a lot of mistakes. We're going to fix a lot of those.

That being said, I do have a question for EMO. EMO's still on the line, I hope.

It has to do with the emergency alert system itself. Historically, emergency alert systems didn't have the probation for time delays in terms of generate a message and release it. It's always been a real-time, active thing. These were designed a number of years ago where there was no way to actually queue messages before release to verify and validate. And I believe that system is still in place for probably historical legacy

reasons and nobody's actually evaluated whether that should actually be updated.

Has there been any thought given to looking at that system and saying, "Look, why don't we put a one-minute delay in this so that we can actually retract, you know, the possibility of an error?" because we can't totally rule out human error in these systems?

I know this was not possible before, but I think with modern technology it could be done.

EMO, could you respond to that?

MR. KHAWJA: Thank you. It's Teepu Khawja, for the record.

I'll start my response by saying my understanding of the system is still consistent with yours in terms of all the checks and balances occur beforehand, and once a message is loaded up, it's nearly instantaneous. So for example, the duty officer had loaded it up erroneously at 7:23 and at -- almost instantaneously, within that same duty, it was distributed.

So the system itself is near instantaneous, and the reliance across PTs is really about determining the checks and balances are in place beforehand to avoid anything that you just -- a scenario such as --

which you just described.

As per my earlier presentation, we -- there is a governance council that the various provincial -- provinces and territories sit on with other organizations that -- where we discuss these types of issues. And I would say from the alert ready system itself, it is a national system, so there's different perspectives from different PTs as well as comm reps in terms of how that operation is set up and operates because, really, the intent is to give instantaneous information for a clear and immediate threat.

So in my short time here, I'm not aware of any discussions that have been occurring internally with that -- within the governance council as to what you just described, for example, a subsequent check and balance with a one-minute delay as an example.

I would just ask if I could turn to my Director, Ray Lazarus, to see if he has any additional information to provide on that.

MR. LAZARUS: Thank you, Teepu.

Ray Lazarus, for the record.

I don't have information to vary anything that you just said, Teepu. I would only add the

consideration that usually if a situation warrants the issuing of an alert, there is a driving force behind that in terms of the urgency to get information to the public. So I think a deliberate delay, while it might serve the purpose that was just mentioned, would be counter-intuitive to, you know, the process and the intent behind the message, so that would have to be something that has to be looked at very carefully. But as to the actual system provisions, you know, what you have explained is exactly what it is.

Thank you.

THE PRESIDENT: Thank you.

Well, maybe this is a good segue to ask Mr. Shepard from New Brunswick Emergency Measures Organization your perspective on this false alert, the EMO response and things that you do differently or any best practice from your end that you would suggest.

Mr. Shepard?

MR. MacCALLUM: Hello. This is, for the record, Greg MacCallum, the Director of New Brunswick EMO. Can you hear me?

THE PRESIDENT: Not very well. Maybe you can come a bit closer to the microphone, please.

MR. MacCALLUM: I can try that.

Roger Shepard is, I don't believe, on the call. He is the program manager for nuclear preparedness. I am the Director of New Brunswick Emergency Measures Organization.

In response to your question -- I'm hoping you can hear me okay now, Madam President.

THE PRESIDENT: It is better. Thank you, Mr. MacCallum.

MR. MacCALLUM: In response to the question about New Brunswick's use of the public alerting system, it's already been well described by previous presenters about, you know, the construct and the -- and how the mechanism of alerting occurs. I would just describe some differences here in New Brunswick.

We here in New Brunswick have the protocol whereby if an alert is to be issued, it is only issued after a double authentication at the operation centre. We have five OPS that can prepare the alert but none of them can release it without it being authenticated and validated by a double authentication system by involving myself and the Chief of Operations here for New Brunswick Emergency Measures.

In terms of the user interface for the system itself and it was just discussed about imposing a delay in the system, we don't see that as a necessity because as you're preparing an alert the last screen prior to actually sending it is a requirement to review and validate and authenticate what the intent is of the broadcast intrusive alert before you hit the "Sender" button. So that is, because there are more than one human being involved in the process here, that is a check and balance we have in place to ensure that no mistakes are being made that could result in a false alert.

We are also satisfied that the user interfaces, and I pluralize that because there is a clear distinction and a visible difference between the training side of Alert Ready and live side of Alert Ready, so you know that is part of the training and the refresher training of the operations staff to be absolutely certain, if they're doing any training, that they are in the training side of it because of the implications of course of being in the live side. That is a double-check, if you like, on the intentions of the action, and that's why we engage senior EMO officials in the authentication.

THE PRESIDENT: Okay, thank you. Thank

you for sharing that.

Commission Members, if you've got any additional questions, if you can just put your hands up.

Maybe I will as the EMO folks if you've got any - oh, so Dr. McKinnon, to you next, please.

MEMBER MCKINNON: Yes, thank you.

I noticed that most of the EMO remedial actions involved training or adding procedures, and in the CNSC's summary presentation there was a statement that CNSC staff will work to ensure a coordinated government response for all potential scenarios.

Over the years I've worked with a number of emergency situations around the world and one common characteristic is, I would argue, that it's probably impossible to anticipate all potential scenarios, and so I think you know preparation really goes beyond training and scenarios and procedures.

So what I've noticed is key, and I'd like to enquire to both CNSC and to EMO is, has there been any discussion of what key characteristics are required of the organization and the response team to adapt to any unrehearsed scenarios because they are fairly likely to occur at some point?

THE PRESIDENT: Thank you, Dr. McKinnon.

So we'll turn to EMO first, and then CNSC staff.

MR. KHAWJA: Thank you for the question.

So my understanding is obviously since the false alert itself went out there is a strong desire to make sense for engagement with OPG, Durham Region, with the City of Toronto, with EMO in terms of not necessarily specific to false alerts solely but how do we coordinate and improve communications to the communities, because obviously whether it's through social media, the media itself, Alert Ready System, etcetera, the public needs to know information in a timely fashion so, as others have said during the session, this was a learning opportunity as well to find opportunities to improve on the process and particularly on the communication side.

I would offer that from EMO's perspective at this time I'm not familiar with any engagement specifically with CNSC as you refer to, Doctor, in terms of coordinating that whole of government type of response, so I would defer to CNSC on that point and am you know always open to opportunities to improve communications across a number of organizations so am happy to listen for their

commentary as well with respect to that.

THE PRESIDENT: Thank you.

Before we turn to CNSC staff, I know one of your EMO in your action plan which I think gets to what Dr. McKinnon is asking is, your ongoing action around ensuring that critical thinking in atypical situations that the POE staff can actually respond to those, and that you're going to be building that into your exercises. And I think that's exactly what he's getting at, because you can't possibly plan every possible scenario and both procedures and protocols will get you only so far.

At the end of the day, you do want people to be able to exercise appropriate judgment, have the right critical thinking and make the appropriate decisions in the absence of procedures and protocols.

So, can you comment on that? It's not just about communication; it really is their ability to respond to the unexpected in a timely way.

MR. KHAWJA: All right. Thank you, President Velshi for that clarification.

So I can offer that one of the things -- ones that I've reinforced since I've arrived is, as much as the action plan itself is about that strategic thinking,

critical thinking, spills, etcetera, being specific to exercise is my -- under my view and leadership of EMO it's not going to be restricted just to exercise itself. So as with many EM organizations we need our own internal training and exercises for staff, so that's one aspect.

We participate, for example, with OPG in exercises so as we develop those exercises my perspective is our team will be developing exercises in such a way that it includes that type of critical thinking aspects, and I'm sure my partners on this session would agree that they would be bringing similar approaches, but I have communicated to my team that I extend that even to the recruitment process in terms of how do we even interview for staff; how do we develop those type of questions and recruit the right type of people?

So it's not necessarily -- I know the action plan is specific to exercises, but my view is that those are important elements regardless and it starts from recruitment all the way to ongoing training internally as well as participation in exercises with our stakeholders. So that has been communicated pretty clearly from myself to my management team already.

Thank you.

THE PRESIDENT: Thank you.

CNSC staff.

MS HEPPELL-MASYS: Certainly I agree with you that practising only for the known scenarios brings a limited view, so you also have to be ready for the unknown scenarios and to be fully resilient to any scenarios that come our way.

So recently some of the characteristics that have been already addressed include the competency of our staff, the agility of our staff to think on their feet, and also training and exercises are part of those, to practise those things.

In terms of if there is a fora to discuss such matters, I think we again assure you, and you'll be briefed this afternoon about how all those stakeholders that are here today to talk about this matter can work really well together, and we'll talk about that later on this afternoon when we discuss the EPR Mission, so certainly I'm very confident that we have this ability to discuss such matters, and one of the format that we could also bring this in terms of an agenda would be at the Federal/Provincial/Territorial Nuclear Emergency Management Committee which brings all those stakeholders together, and

so there is already in place such a forum to discuss things like that.

And I'll turn to Chris Cole who perhaps can add a little bit more because he participates -- he has participated in those committees. And I'll turn to you, Chris, to add more.

MR. COLE: Thank you.

For the record, Christopher Cole. I'm the Director of the Emergency Management Programs Division, or the former Director, excuse me.

I'd like to add that what Kathleen has indicated is that, when we do do exercises, we try to emphasize the unknown, and we put injects and different scenarios in to test our staff to be flexible, responsive, and very decisive. And I feel that that exercise capability was reflected in the response of the CNSC on the 12th of January.

In particular, I'd like to note that the duty officer went above and beyond the call of duty when he received that false alert. Independent of any other notification he immediately took action, he immediately informed the right people and the CNSC very quickly became aware that if there was a situation here that had to be

addressed, and that really reflects the type of people that we have in our Emergency Operations Centre, they are able to be flexible; they are able to move quickly and to make decisions. And that's a reflection of our exercise program.

And in terms of diversifying our capabilities, we've already initiated many events before the false alert. We participate in cyber exercises, in fact there's one next week.

We are going to initiate security exercises which was identified through our EPREV Mission, so that's in the pipeline already.

We have been in communications with Chalk River Laboratories to work with them in the event of emergencies such as transportation exercises.

And we exercised a COVID scenario back on May 14th to see if we could fully respond outside of 280 Slater.

So overall, I think that we have the correct capabilities within the CNSC to respond, and we showed that on the 12th of January; we moved very quickly within our lane, of course, as we've mentioned. But overall I think we're moving forward. We're always looking

for new ideas. We're looking for various scenarios that are going to help us. And, indeed, we're trying to maintain that flexibility of responsiveness and decisiveness.

THE PRESIDENT: Thank you.

We've got Mr. Jammal and then Mr. Vecchiarelli.

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

Thank you, Madam President.

I think the question is really how flexible the stakeholders are able to go out the procedures and the training.

In January there was a lot of freeze with respect to authorization. The key point here is, I think the mayor mentioned the fact of the stakeholders role. The question that's coming from our Commission Member with respect to outside the normal procedures is key here, and I think it's time for all the stakeholders to work together. So if the CNSC is frozen as the mayor mentioned, then we can have a direct communication with the fire chiefs and then use their website to complement what is it we are not able to do. And that is the key when I'm speaking of international chairing, when I chaired the Emergency

Preparedness Response post-Fukushima and Mr. Cameron took on the communication element as an action arising from that conference.

The key point here is the speed, go out often, if there are mistakes correct them, but at the same time know who are your allies -- more just from the allies that the transmission of information can be done.

We learned this lesson during Fukushima. The CNSC became more or less the vector or the pipe of information to the public when other government agencies were not able to go out as fast as we did.

The key point here is to know who our stakeholders are and work with them so that the barriers will come down then the errors are in place and that we can capitalize on each other's capability to go out fast and as often as needed in order to either update or fix, if there were any errors.

Thank you, Madam Chair.

THE PRESIDENT: Thank you.

Mr. Vecchiarelli.

MR. VECCHIARELLI: Yes, Jack Vecchiarelli, for the record.

I'll be very brief, then turn it over to

Scott Burns.

I just wanted to thank the Commission for giving us an opportunity to be part of this discussion. Clearly, many lessons learned on all sides from multiple parties and with some final thoughts on behalf of OPG I'm turning this over to Scott Burns.

Thank you.

MR. BURNS: Thank you. I was just on muted there. Thanks Commissioner Velshi.

Just for a quick second I just -- from the conversation of the stakeholders and partnerships, I did want to acknowledge the Region of Durham and the City of Toronto and their Emergency Management Offices that we work closely with. Both were significantly impacted in actively responding on the heels of the event, and responding to their communities, and you know play a role in public alerting and notifying the communities in the event of a nuclear emergency.

I know that at least the Region of Durham is on the call listening, and I just want to acknowledge both of those partners who we have worked with closely you know for many years, but closely in response to this event, as well, so I just wanted to acknowledge them.

Thank you.

THE PRESIDENT: Okay, thank you.

EMO, any final comments you'd like to make?

MR. KHAWJA: Thank you, President Velshi.

Similar to others, I want to take the opportunity to thank the Commission for the opportunity to come before you and provide an update on the action plan. And I can assure you that from my perspective, similar to the others who have relayed their experiences, I was not even on the job on a Sunday morning receiving that alert. So, as a citizen of Ontario, I could imagine the impact of and the magnitude of a false alert.

And now as a part of EMO, I can tell you the pride that they take as a part of the EMO for the Province of Ontario, as well as being part of the broader EM community is strong, and rest assured we all collectively understand and appreciate the magnitude of the impact and we're not just here to provide an update to correct an error, but we take our positions and our responsibilities very seriously.

So as others have said, this has been an unfortunate but a great opportunity to learn and identify

gaps and try to improve ourselves within the EMO and collectively across the EM community, and we take that very seriously and we thank the Commission again for the opportunity to come here and provide those updates and share that.

Thank you.

THE PRESIDENT: Thank you.

CNSC staff, anything you'd like to add?

MS HEPPELL-MASYS: Thank you, President Velshi for the opportunity to comment.

As we have said all along, this has provided a fantastic opportunity for learning. It was the event itself, of course, created a lot of angst. But, having said that, we are striving to continue in improving our responsiveness as well as maintaining the trust of the public as a go-to source of information for factual information and credible information. So thank you for the opportunity.

THE PRESIDENT: Thank you.

Dr. Demeter, did you have something you wanted to add?

MEMBER DEMETER: Thank you very much. I think it's very important to address some of the comments

in the reports for the CNSC staff, as well.

I've done basic Health and Social Services Emergency Training at the federal and provincial levels, which is Ontario, actually, in my past lives. And one of the key messages you hear at the get-go is, know your chain of command and have it clearly stated so that there's no miscommunication between senior, middle and staff on the ground. And, also, that when you activate an emergency command centre you activate it; you don't kind of activate it. It's not a like a half-pregnant thing.

So there were some concerns raised in the report about CNSC staff relative to communications between senior and middle management and about this partial activation which led to all kinds of confusion about what -- you know, how far they could talk. Those are kind of concerning because if you've got an EOC it should be clear. When you activate it, you activate it, and here's the chain of command.

Maybe CNSC can comment on some of those observations in the report?

MS HEPPELL-MASYS: So thank you for the question. So, I will preface this, but I will pass it on to Mr. Jason Cameron and then afterwards Chris Cole can --

he was the EOC director that day.

So, certainly when you activate an EOC you are quite correct that there is a definite chain of command and there's an organizational structure that is in place. In this instance we partially stood up the EOC and it meant at the time that the section chief would come. We did not invite one in particular on that day. But where we could have done better is to issue a notification alert to everyone and that way it would have been much more -- affirmed the understanding of that happening, so we could have done a lot better there.

Having said that, the section chief showed up very quickly as best as he could on that day.

And in terms of, I will turn to one of our executives, Mr. Jason Cameron who can comment on the role of an executive during these events, and then Chris afterwards.

Thank you.

MR. CAMERON: Thank you, Ms Heppell-Masys on this particular issue, and Commissioner Demeter. This is super important.

In terms of the way in which it unfolded on January 12th, I've reflected back in terms of some of

the communications that I had after the EOC had been activated and I probably would have done exactly the same thing that I did on January 12th. But when we brought in an independent consultant to give us some advice they recognized that those procedures are super important in terms of how things unfolded on that Sunday morning and so we're reflecting on that and improving our processes and procedures going forward.

Maybe I'll stop there.

THE PRESIDENT: I see Mr. Elder has something he'd like to add?

MR. ELDER: Yes, it's Peter Elder, for the record. I'm Vice-president of Technical Support so the Emergency Management Organization comes under me.

In terms of the question, I just want to make two clarifications. The partial activation is part of our Standing Emergency Plan. It's always been there. It actually follows the same structure that the province and licensees have.

What it was intended to be is a situation where we felt we needed to monitor something that wasn't a full emergency yet but had the strong possibility to develop into one. And to give an example, and some of the

reasons why we did this was the lessons from the 2003 blackout where there wasn't actually an emergency in any of the stations but there was an event that obviously could have evolved into an emergency and we wanted to have some capacity to monitor those events rather than just routine.

This is the first time we activated this partial activation and one of the lessons that we did learn is that some of the roles and responsibilities, if it was a -- I wouldn't call it normal, but in terms of what it was designed to deal with, a situation that was we were actually in a monitoring mode rather than an active mode.

One of the learnings from this one is that our procedures were not fully covering what this type of event actually had done, which was actually more of a communication thing, and that some of the roles and responsibilities that are very clear in our normal processes were not clear in this situation. And that was both in terms of the chain of command. For example, in our plan originally the Executive Emergency Team did not have a role during a partial activation. So, we have now added to make sure that they do have a defined role in that one, and that will clarify a lot of the chain of command things.

So it was we used the tool that we had

which was a partial activation and we've learned that how we did it, we did need to improve on the clarity so that we can use it in a broader range of activities.

THE PRESIDENT: Thank you.

Dr. Demeter did you have any follow-up questions or comments?

MEMBER DEMETER: No, that's fine, thank you.

I am glad the chain of command is clarified and communications, so I'm good with that. Thank you.

THE PRESIDENT: Okay, thank you.

Thank you everyone for your participation in this really important agenda item. Public trust is of critical importance and your participation today and the commitment to address the deficiencies and opportunities to get better is very reassuring, and I thank you for that.

We will take a break for lunch and we will resume at 1:30 P.M. with our next agenda item which is on the 2019 Integrated Regulatory Review Service Mission. So we'll see you then.

Thank you.

--- Upon recessing at 12:47 p.m. /

Suspension à 12 h 47

--- Upon resuming at 1:30 p.m. /

Reprise à 13 h 30

THE PRESIDENT: Good afternoon, everyone and welcome back.

The next item on our agenda is the 2019 Integrated Regulatory Review Service Mission, the IRRS.

I would like to acknowledge that we have representatives from Health Canada and Natural Resources Canada joining us and they will be available for questions. They can identify themselves later during the question period.

I will turn the floor to Mr. Hugh Robertson for the presentation from CNSC staff.

Mr. Robertson, over to you.

CMD 20-M9

Oral Presentation by CNSC staff

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

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

Joining me today is Dr. Nana Kwamena, the Senior Project Officer for the mission, and Christine Howden, the Project Officer, along with many other CNSC experts who provided invaluable input and support.

The purpose of this presentation is to present the results from the 2019 Integrated Regulatory Review Service, or IRRS, Mission to Canada, along with Canada's response.

Before going into the details of the conduct of the 2019 IRRS Mission, I would like to acknowledge all those who contributed to this project. This includes the many staff who participated from the CNSC, Natural Resources Canada, Health Canada and the IAEA, along with the international peer review team and the licensees whose sites were visited. This mission would not have been possible without the cooperation and collaboration of all these participants and I would like to sincerely thank all those who participated and contributed to the success of the mission.

I would also like to note that we have

representatives from Natural Resources Canada and Health Canada present today and available to answer questions.

The International Atomic Energy Agency offers its Member States a wide range of review services in which an IAEA-led team of experts compares countries' practices with IAEA standards.

Examples of review service missions offered include:

- the Integrated Regulatory Review Service, which reviews the common aspects of a Member State's national, legal and governmental framework and regulatory infrastructure for safety, and the subject of today's presentation;

- the Emergency Preparedness Review Service, or EPREV, which reviews a Member State's level of preparedness for nuclear and radiological emergencies. Later today you will be hearing about Canada's first EPREV mission that also took place in 2019.

CNSC staff has also participated in many IAEA review service missions as a lead or reviewer. Between 2014 to 2018, CNSC staff have participated in 27 IRRS missions.

Mr. Ramzi Jammal, Executive Vice-President

and Chief Regulatory Operations Officer, has played a key leadership role in the conduct of a number of these missions. Most recently, he led the IRRS mission in the U.K. and follow-up IRRS mission in Japan. As well, he has led initial and/or follow-up missions to China, India and Russia.

I will now pass the presentation over to Dr. Nana Kwamena to talk about the conduct of the 2019 IRRS mission.

Dr. Kwamena...?

DR. KWAMENA: Good afternoon.

My name is Dr. Nana Kwamena. In 2019, I was a Senior Project Officer and the liaison officer for the 2019 IRRS mission to Canada. As the liaison officer, I was responsible for the coordination of the mission, with support from a large team of CNSC staff from all parts of the organization as well as licensees and staff from other federal departments.

Before describing the preparations and conduct of the 2019 mission, I will briefly summarize the outcomes of the previous IRRS missions to Canada.

Canada previously hosted an IRRS mission in 2009. Through this mission, the IRRS review team

determined that Canada had a mature, well-established nuclear regulatory framework.

A follow-up mission took place in 2011 to assess Canada's progress in addressing the findings from the 2009 mission, the CNSC's response to the events at Fukushima Daiichi, and as well to review the regulation of the transport of nuclear substances.

The follow-up mission review team noted that the CNSC's response to the events at Fukushima was prompt, robust and comprehensive.

Both missions produced an IAEA report as well as a report outlining Canada's response, which are publicly available on the CNSC's website. All action items from the 2009 and 2011 IRRS peer review missions have been completed and are closed.

In September 2018, CNSC, on behalf of Canada, requested an IRRS mission. The mission was requested to:

- ensure continuous improvement of nuclear safety; and

- to demonstrate that the regulatory framework, including the approach to regulating waste management and decommissioning, is robust and consistent

with international standards and best practices.

As previously mentioned, the last IRRS mission to Canada was conducted in 2009, with a follow-up mission held two years later. The conduct of the 2019 IRRS mission meets Canada's ambitious commitment to conduct an IRRS mission every 10 years. The CNSC, on behalf of Canada, made this commitment at the Convention of Nuclear Safety following the accident at Fukushima Daiichi.

There are three phases of an IRRS mission, as outlined on this slide. The following slides will summarize how the milestones for each of the first two phases were achieved. The latter part of the presentation will address the milestones for the post-mission phase.

To fulfill the requirements of the preparatory phase, CNSC hosted a preparatory meeting in December 2018. The main outcome of the meeting was a signed Terms of Reference that summarized the major milestones for the preparation of the mission as well as clarified the responsibilities and commitments of the host country and the IAEA.

The main tool for the IRRS mission was the completion of a self-assessment questionnaire by the host country. The questionnaire was used to assess Canada's

regulatory framework against IAEA's safety standards as the international benchmark for safety as well as identify areas for continuous improvement.

The self-assessment followed a modular structure and the modules included in the self-assessment are summarized on this slide. This set the scope of the mission.

Two modules were not addressed as part of the self-assessment questionnaire:

The aspects of Module 10 on Emergency Preparedness and Response were covered by the EPREV mission to Canada which was held in June 2019 prior to the IRRS mission.

The module on the Safety of Medical Exposure was out of scope as this area is under provincial, territorial and other jurisdictions, and this mission focused on areas under federal jurisdiction.

CNSC led the preparations of the self-assessment and collaborated with staff from Natural Resources Canada and Health Canada on areas relevant to their department's mandate.

On July 5, 2019, the CNSC, on behalf of Canada, submitted the advance reference material, or ARM,

for the mission to the IAEA.

The ARM was more than 1,000 pages and included:

- responses to the self-assessment questionnaire modules;
- a summary report, as shown on the slide, which provided a narrative of the responses to the questionnaire;
- an initial action plan with self-identified areas for improvement; and
- over 270 reference documents, including the *Nuclear Safety and Control Act*, regulations and regulatory documents.

The material was provided to the IAEA two months in advance of the mission, as per IAEA guidance. This was to allow the experts the opportunity to review the responses, develop first impressions and identify areas where they would like to ask questions of CNSC staff.

Overall, Canada concluded that it has a modern, robust regulatory framework that aligns with IAEA safety standards and international best practices.

No gaps were identified in implementing the safety standards. However, in the spirit of continuous

improvement, CNSC identified a number of initiatives to strengthen its regulatory framework. These improvements include:

- publishing the Waste Management and Radiation Protection series of regulatory documents;
- developing regulatory documents with licensing application guides for other aspects of the nuclear fuel cycle; and
- populating the management system portal.

The CNSC's initial action plan, which was developed in July 2019, summarized these initiatives and in many cases the CNSC was already proactively addressing many of these items.

From September 3rd to 13th, 2019, a team of 24 experts from 17 Member States conducted the IRRS mission to Canada with an emphasis on waste management. The IRRS team was made up of IAEA staff as well as experienced regulators who were recruited by the IAEA from Member States.

The elements of the mission that addressed the emphasis on waste management included having three experts with expertise in this area as well as additional site visits in the areas of waste management and

decommissioning.

The IRRS review team was led by:

- Marta Ziakova, Chairperson, Nuclear Regulatory Authority of the Slovak Republic, as Team Lead; and

- Mika Markannen, Principal Advisor of the Finnish Radiation and Nuclear Safety Authority, as Deputy Team Lead.

The IRRS mission consisted of 70 interviews, seven site visits to CNSC-licensed facilities and two policy discussions.

The IRRS team conducted interviews with CNSC staff and management as well as staff from Health Canada. The objective of the interviews was to allow the IRRS review team to gather any additional information that was not covered in the written material or to seek further clarification of the written material.

The interviews also provided an opportunity for the regulatory body and the review team members to discuss best practices and professional opinions as a mutual exchange of views.

In addition, the IRRS review team leadership met separately with the Associate and Assistant

Deputy Ministers of Natural Resources Canada and the President of the Commission to clarify the CNSC's role as an independent nuclear regulator.

The purpose of the site visits was to gather information on how the regulatory body discharges its responsibilities. This was achieved by direct observation of CNSC-conducted inspections at the seven CNSC-licensed facilities listed on this slide.

The objective of the site visits was not to gather information on the regulated facility. The sites visited covered most aspects of the Canadian nuclear fuel cycle, from waste management facilities, to power plants, to research reactors and medical facilities. Uranium mines and mills were excluded due to the distance required to visit the facilities and the length of the IRRS mission. The choice of the site visit locations were recommended by CNSC staff and were accepted by the IRRS team leadership during the preparatory meeting for the mission.

During the site visits, the IRRS team gathered information on the roles and responsibilities of inspectors, as well as inspection processes.

The IRRS team members also had the opportunity to have direct conversations with licensees to

discuss their relationship with the regulatory body.

The third element of the IRRS mission was the policy discussions. The purpose of the policy discussions were to provide a forum to promote constructive sharing of views, experience and lessons learned between the host country and the IRRS team.

The discussions were meant to provide greater clarity of regulatory issues that have the potential of having greater policy implications and/or address specific technical issues relevant to the nuclear safety or radiation protection in the host country.

The policy discussions for the 2019 IRRS mission to Canada were:

- 1) strengthening the CNSC's regulatory safety culture; and
- 2) regulatory readiness for innovation.

The IRRS review team confirmed that Canada has a comprehensive and robust regulatory framework for nuclear and radiation safety covering current facilities and activities. The review team further concluded that the CNSC strives to continuously upgrade its regulatory framework to address new challenges and upcoming technologies.

The observations and findings of the team were summarized in the IRRS report to Canada. On February 18th of this year, the report was made public on the CNSC's webpage along with Canada's response.

I will now pass the presentation to Ms Christine Howden who will further expand on the findings from the mission.

MS HOWDEN: Good afternoon.

My name is Christine Howden and I am a Project Officer in the Internal Quality Management Division.

The next section of the presentation will summarize the findings arising from the 2019 IRRS mission, along with Canada's response to these findings.

International review service missions promote continuous improvement and are a key mechanism for strengthening regulatory effectiveness. The 2019 IRRS mission provided valuable insights to the CNSC and other Canadian federal departments, namely Natural Resources Canada and Health Canada.

Canada was presented with a number of good practices as well as recommendations and suggestions to improve Canada's oversight of the nuclear industry,

including the CNSC's regulatory framework. It is important to note that the number of recommendations, suggestions and good practices a host country receives is not indicative of the robustness or effectiveness of the host country's regulatory infrastructure and should not be considered a measure of current performance of one regulatory body relative to any other.

The 2019 IRRS mission to Canada resulted in six good practices, four recommendations and 16 suggestions.

Before getting into the details of the actions Canada has committed to taking to address specific recommendations and suggestions that were received through the 2019 mission, it is essential to understand the difference between each type of IAEA finding.

Findings can either be a good practice, recommendation or suggestion. Each finding is linked to an observation which must be clearly documented in the final report to the host country and must be linked to a specific IAEA Safety Requirement.

A good practice is received when the review team recognizes an outstanding organization, arrangement, program or performance superior to those

generally observed elsewhere.

A recommendation is received when the review team believes arrangements to meet IAEA Safety Requirements are either missing, incomplete or inadequately implemented.

A suggestion is received when the review team identifies an opportunity for improvement not directly related to inadequate conformance with IAEA Safety Requirements. Suggestions are intended to stimulate the regulatory body to consider new or different approaches to enhance performance.

Canada is committed to continuous improvement and as such is committed to addressing recommendations and suggestions arising from the 2019 IRRS mission. A full response to each good practice, recommendation and suggestion is provided in Canada's response report which was shared publicly on the CNSC's external webpage.

All findings were carefully reviewed and considered. The response report provides a fulsome explanation for how findings will be addressed. It includes concrete actions and timelines for completion.

The next part of the presentation will

focus on summarizing the actions Canada has committed to taking in order to address each finding. For the full recommendation text, please refer to Appendix A of this presentation deck.

Throughout the rest of the presentation I will be referring to recommendations and suggestions and their associated commitments as R1 for Recommendation 1, S1 for Suggestion 1, and so on.

Canada received the following six good practices and proudly acknowledges all of them. In the spirit of continuous improvement, Canada is committed to continuing to seek opportunities to further improve upon all these practices.

Canada received four recommendations. All recommendations were accepted.

To address these recommendations, Natural Resources Canada has committed to reviewing its existing policy for radioactive waste and will consider how it may be enhanced, including the establishment of an associated strategy.

The CNSC has committed to updating its draft regulatory document, REGDOC-2.9.2, Controlling Releases to the Environment, to address inconsistency in

the application of dose constraints for derived release limits for Class I facilities. This need was already self-identified by the CNSC through the self-assessment completed during the preparatory phase which was submitted to the IAEA prior to the conduct of the mission.

The CNSC has also committed to finalizing the current revision of the *Radiation Protection Regulations* to be more consistent with the IAEA Safety Requirements, while taking into account the CNSC's comprehensive framework for safety and the needs of Canadians. CNSC will continue to review relevant international standards and recommendations to identify opportunities for enhancing safety as suggested by the IAEA recommendation.

Lastly, the CNSC has committed to revising its regulatory document RD-364, *Joint Canada-United States Guide for Approval of Type B(U) and Fissile Material Transportation Packages*, to include references to reflect the current standard. While the contents of the current document are still accurate, the references need to be updated to reflect the current standard.

Canada received 16 suggestions on a wide variety of topic areas. Three of the 16 suggestions were

not accepted as the existing legal framework irrefutably addresses the IAEA requirements.

It is very important to Canada to be transparent with regards to the rationale for not accepting these three suggestions and clearly explain why no actions are required.

Canada is of the view that the existing legal framework already embeds the principle of justification and clearly assigns the responsibility for safety to the person or the organization responsible for a facility or an activity. Seeing as these aspects are already fully covered, Canada will not make any legislative amendments as it would provide no improvement to our current robust legal framework.

The first suggestion, S1, states that the Government should consider explicitly addressing IAEA's Safety Fundamentals, SF-1, Fundamental Safety Principles, Principle 4 (on Justification) in its legal framework.

According to Principle 4, "for facilities and activities to be considered justified, the benefits that they yield must outweigh the radiation risks to which they give rise."

This suggestion was not accepted as

licensing under subsection 24(4) of the *Nuclear Safety and Control Act* fundamentally involves assessing what risks are reasonable and therefore what risks are acceptable. This discretionary decision of reasonable versus unreasonable risk is an exercise of justification. The regulatory discretion exercised by the Commission embodies the Fundamental Safety Principle 4.

In addition, the *Canadian Environmental Assessment Act, 2012*, and the new *Impact Assessment Act* require a sound and rigorous assessment of the justification of a project. A proponent of a designated nuclear project is required to justify that the project is the best option in terms of socioeconomics, safety, and protection of the public and environment. The results of the assessment must be considered by the CNSC prior to issuing a licence.

Suggestions S2 and S3, as outlined on the slide, were not accepted as Parliament's statement of the licensee's primary responsibility for safety is spelled out in paragraph 24(4)(b) of the *Nuclear Safety and Control Act*, as the regulator cannot issue a licence unless it is satisfied that the applicant will adequately provide for the health and safety of persons, protection of the

environment, national security and compliance by Canada with its international obligations.

The responsibility is then translated into detailed obligations on licensees, as outlined generally in subsection 12(1) of the *General Nuclear Safety and Control Regulations*.

In addition, the *Nuclear Liability and Compensation Act* establishes a compensation and liability regime that also reflects the prime responsibility of the operator. The *Nuclear Liability and Compensation Act* reflects the international structure for third-party compensation for damage in the unlikely event of a nuclear accident and it channels the financial liability for an accident entirely to the operator. Compliance with regulatory requirements does not relieve the operator from this responsibility.

Canada accepted the remaining 13 suggestions and is committed to addressing them.

It was proposed by the review team that Health Canada should consider undertaking a survey of radionuclide levels in building materials or indoor gamma dose rates arising from building materials to determine if they make a significant contribution to public

exposure. Elements of this survey have been previously conducted and have indicated little risk of significant gamma exposure from building materials used in Canada. Health Canada has committed to consolidating and updating the risk assessment, where necessary. Results will be used to determine whether further action is required.

The remaining suggestions are under the CNSC's purview and the CNSC has committed to a variety of actions to address them. These actions include:

- ensuring the upcoming Human Resource Management Plan clearly identifies the core and emerging skill requirements of the organization and the workforce needs to execute on the mandate;
- developing and updating a number of internal management system documents, such as the development of a consolidated safety policy;
- updating a number of regulatory documents;
- reviewing and considering whether there is merit in moving to a notification scheme for some very low-risk applications; and
- formalizing and documenting the current practices for inspector exchanges and ensuring objectivity.

Canada is committed to continuous improvement and will be tracking all actions arising from both the initial plan that was submitted as part of the advance reference material and the action plan addressing the findings of the peer review mission. To ensure sufficient oversight, the CNSC will be tracking progress on these actions through its Harmonized Plan for Improvement Initiatives.

These defined actions show Canada's commitment to addressing the findings arising from the 2019 IRRS mission and will be considered the measures for determining whether recommendations and suggestions have been fully addressed prior to the IRRS follow-up mission.

Canada is committed to conducting a follow-up mission within four years which aligns with the recommendations of the IAEA. The purpose of the follow-up mission is to review Canada's progress in implementing the initial IRRS mission recommendations and suggestions. It can also include the review of specific topical areas not previously covered, if requested by the host country.

I will now pass the presentation back to Mr. Robertson to conclude the presentation.

MR. ROBERTSON: Hugh Robertson, for the

record.

Overall, the 2019 IRRS mission was a success which would not have been possible without the cooperation and collaboration from all participants. Lessons learned throughout the various phases of the mission were captured. Both what went well and opportunities for improvement were documented. These will be considered as we prepare for the follow-up mission.

Some key factors that contributed to the success of the mission included:

- good engagement with other federal departments;
- a defined mission scope early in the process to avoid potential duplication of efforts;
- dedicated staff throughout the organization to support the preparation and conduct of the mission -- CNSC staff received praise from the IRRS team for how well the mission was organized; and
- continuous and effective communication with all stakeholders. During this mission, Canada was innovative and created an online web application to share key information on logistics, schedule, the City of Ottawa, CNSC counterparts, and more.

Some opportunities for improvement that were identified include:

- ensuring adequate timing and timelines to prepare the advance reference material and logistics for the mission; and

- lastly, the need to have a consistent approach to the interpretation for compliance with IAEA safety standards by the IAEA experts. The CNSC is working with other like-minded countries that have recently hosted IRRS missions to document lessons learned for the IAEA in order to continuously improve IRRS missions.

I would like to emphasize that the outcomes of the 2019 IRRS mission will enhance the CNSC's ability to deliver on its four key organizational priorities:

The CNSC is committed to a modern approach to nuclear regulation. During the IRRS mission, discussions were held on the readiness and capacity of the regulator to respond to innovation.

The CNSC continuously strives to be a trusted regulator, recognized as being independent, open and transparent, as well as a credible source of scientific, technical and regulatory information. The CNSC

proudly received a good practice on its high level of transparency and openness and was recognized as a leader in this area.

The conduct of the 2019 IRRS mission supports the CNSC's priority to maintain a global nuclear influence. The CNSC is demonstrating leadership by conducting IRRS missions every 10 years and contributing to IRRS missions around the globe.

Lastly, the CNSC will continue to take the necessary steps to ensure that it is an agile organization. Through the 2019 IRRS mission, the CNSC solidified its commitment to continuing to ensure it clearly identifies the core and emerging skill requirements of the organization and the workforce needed to execute on its mandate now and into the future.

The 2019 IRRS mission provided benefit to Canada in numerous ways. This international peer review reaffirmed once again that Canada's regulatory framework, including the approach to regulating waste management and decommissioning, is robust and consistent with international standards and best practices. It also demonstrated Canada's commitment to continuous improvement and validated the self-identified areas to further

strengthen Canada's regulatory framework.

Canada also demonstrated leadership and dedication to international collaboration by exchanging lessons learned and best practices with other IAEA Member States.

By addressing the findings of the mission and implementing its action plan, Canada will enhance its regulatory effectiveness.

This concludes our presentation. Staff from the CNSC, Health Canada as well as Natural Resources are available to answer any questions the Commission may have.

Thank you.

THE PRESIDENT: Thank you.

Let me open the floor for questions from Commission Members.

We will start with Dr. Berube.

MEMBER BERUBE: Well, thank you for that presentation. It looks like the CNSC is doing fair well overall, so that's wonderful to hear.

I'm just curious about the actual organization itself. You know, we don't deal with this a lot here, so I would like to understand a little better.

This looks to me like it's actually a peer review process by which people are appointed from their national panel to come and take a look and see how you are doing.

In that regard, do they actually benchmark you against other organizations? Do they actually score you against other organizations? If so, where does the CNSC rank overall?

MR. ROBERTSON: Hugh Robertson, for the record.

No, this is very much an assessment against IAEA safety standards and it is very clear that this is not to be ranked against other countries or even previous missions that a country may have. So the focus really is on benchmarking against the IAEA safety standards.

MEMBER BERUBE: And just to add to that, is there a central repository for information that's held against all the international organizations that contribute and participate in this? You know, how is that disseminated?

MR. ROBERTSON: Hugh Robertson, for the record.

Yes, the IAEA publishes all of these reports and they are centrally managed by the IAEA. We have linked to that from our website as well as publishing our own action plan from our website.

THE PRESIDENT: Thank you.

Dr. Demeter...?

MEMBER DEMETER: Thank you for that overview. It was a lot of work and I appreciate the feedback and on a broad scale I am quite happy and comfortable with it.

If we do have someone from Health Canada on, I know that the one issue Module 10 was dealt with previously through this EPREV to Canada that we will talk about later, but Health Canada had been working on a Canadian guide on medical management of radiologic emergencies, or radiation emergencies and I wonder if that made it into this review or if the update has been published yet.

MR. AHIER: So this is Brian Ahier, for the record, from Health Canada. I am Acting Director General of Environmental Radiation, Health Sciences Directorate.

The particular guide that you are

referring to has not been updated. I believe it was released in about the 2015 timeframe. It was not part of this review. The area where Health Canada contributed was really in the area of existing exposures focusing on issues such as radon and management of natural radioactivity. So it was not included there, but it was referenced in the discussions that occurred in the EPREV peer review that will be on the upcoming agenda.

MEMBER DEMETER: Okay, thank you. I will hold my questions until that discussion.

Thank you.

THE PRESIDENT: Okay.

Dr. McKinnon...?

MEMBER MCKINNON: Yes, thank you.

Review and benchmarking is always very valuable and it is nice to see that Canada got a good report card from that.

I have a question regarding the purpose and context of the review. So I know there is, you know, regular contact with IAEA and other regulators worldwide, so it's not likely that there would be major surprises, and the 10-year interval of the IRRS mission is also a very long time in terms of technological or even government

policy changes.

So my question is, can you put into perspective the role of this formal visit compared to these other more regular and perhaps less formal interactions you have with IAEA?

MR. ROBERTSON: Hugh Robertson, for the record.

Yes. These are held every 10 years and I would note that there is a follow-up mission four years after that, but I will pass this over to our Executive Vice-President and Chief Regulatory Operations Officer, Mr. Ramzi Jammal, to respond to.

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

The peer review process, even though it is a 10-year cycle, that was established through the action plan post-Fukushima as a minimal requirement. As you mentioned, there are many actually formal and informal interactions with other regulatory bodies.

In specific, we are obligated by the conventions to present our report. One of them is the Convention of Nuclear Safety. The second is the Joint Convention on -- I am just going to make the title very,

very brief, it is a very long title -- on Waste Management. Then we submit our reports and we undergo a formal review process.

So at 10 years the peer review is the minimum, but we have the much more frequent reviews under the conventions by which we undergo peer review process.

On the what we call challenges that are presented to us under the conventions, Canada was the first country to include in our convention -- report the findings of the IRRS mission, both the main mission and the follow-up mission. We provide closure to the follow-up mission.

So the answer is the IRRS peer review itself is at minimum once every 10 years and that is the international practice. The European Commission has written in its rules and regulations to be conducted every 10 years and so the IAEA is giving it as a recommendation arising post-Fukushima. We are doing the IRRS peer review as one element, the conventions is the other and there are other what you call an operation safety review by which the IAEA conducts for our operators. As a matter of fact, in the last three years Canada was very busy being visited by the IAEA for the operational safety of the reactors, the

OSART missions, which was done for OPG and Bruce Power. COVID has delayed the meetings of the convention that were scheduled to be this spring and next year.

THE PRESIDENT: Thank you.

Dr. Lacroix...?

MEMBER LACROIX: Thank you for this presentation. It's quite interesting and I was happy to find out that the IAEA has recognized as a good practice CNSC's transparency and openness in communicating with members of the public, Indigenous communities and civil society. The CNSC staff has been trumpeting this for years and now to see it from the IAEA, I mean you have a rubberstamp, so congratulations to the staff.

I have noticed that the team coming from the IAEA is comprised of 24 experts from 17 different states. These people have different cultural backgrounds, they are all highly qualified people, especially in the technical field, and I was wondering how much is their final review report shaped by their own culture and also by their understanding of Canada's governance structure.

MR. ROBERTSON: Hugh Robertson, for the record.

I will ask Dr. Nana Kwamena to respond to

this one.

DR. KWAMENA: Dr. Nana Kwamena, for the record.

I was the Senior Project Officer and Liaison Officer during the IRRS mission, so I thank you for your question.

As part of the process, the IAEA recruits senior regulators from Member States and so, as you point out, they are each going to come with their own experiences from their host country. There is training that is offered to the team members prior to their participation in the IRRS mission.

With respect to how much of the report is influenced by their experience, as part of the advance reference material we provide information about Canada's governance structure. So at the very beginning, prior to the modules, there is a lot of information that provides information about how Canada's Parliament is organized, information about like the House, the Senate, how those are approved, how the legislation is set up. So there is a lot of information in the advance reference material that provides them with some context as to how the government and the legal framework for Canada is, to put it into some

perspective.

As part of the interviews, the experts that come as part of the review team can then ask additional information for clarification to better understand how our structure is formed.

Additionally, as part of the opening meeting there was some information in terms of how our structure is formed, again to give them that background so that they have the information of how the government and the legal framework for Canada operates.

So there's a number of mechanisms within the process that helps to give them that information to help inform their review of the nuclear framework for safety.

THE PRESIDENT: Thank you.

I see Mr. Jammal would like to add to that.

MR. JAMMAL: Thank you, Madam President.

Dr. Lacroix, to complement Nana's answer, it is a very valid question. As someone who led many missions -- and my colleague is being diplomatic, so thank you, Nana, for being diplomatic -- I will take it on.

It becomes an issue between the team

leader and deputy team leader and the members of the team. And you got it bang on, there is always the training is one element, but from the experiences when you go into the field there is that cultural element that sometimes kicks in. But, as Nana mentioned, we go back to the fundamental principles being the safety standard, but there is a role for the team leader, deputy team leader. And that is why you would see in the suggestions that were not accepted, because at the end, as it was mentioned, there is always a verification and discussion between the team and the host country with respect to the final findings of recommendations and suggestions and then at the end if the individuals felt strongly about their suggestion or recommendation then it is up to the host country to accept it or not.

THE PRESIDENT: A couple of questions from me.

One is, Mr. Robertson, you did say that the regulators who have recently had these missions done for them are getting together to talk about lessons learned or opportunities for improvement. A question that one of my colleagues asked earlier was around -- I think it was Dr. Berube -- is how does a regulator know whether they

have improved from one mission to another if there is no quantifiable report that's produced and, as was stated, the number of recommendations or suggestions or findings really don't -- that one shouldn't put too much weight on that.

Is that something that the IAEA is considering, similar to what WANO does? When the operators get assessed, they get, whatever, a 1 rating or 2, or whatever, that they try to quantify that, or is this all just a very subjective way of assessing performance?

MR. ROBERTSON: Hugh Robertson, for the record.

This assessment is done against the IAEA safety standards, so that is the benchmark or the measure that they assess these other countries against. And of course there is a follow-up mission that happens four years later where we report on closing of any actions that we have agreed to and then that is reported to the Convention on Nuclear Safety and so we are held accountable through that framework.

But I would also pass this off to Dr. Nana Kwamena to add some additional details.

DR. KWAMENA: Dr. Nana Kwamena, for the record.

I'm sorry, I am actually going to pass this to Mr. Ramzi Jammal to provide further clarification.

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

Madam President, the IAEA principles for the IRRS mission is on a voluntary basis. Their policy is to never compare one country against the other because they want to encourage many countries to have that service and diplomatically that is their decision. So, as you are aware, many times Canada fought hard and really pushed the Director General of the IAEA to actually have a discussion at the Board of Governors of the findings of the mission so that the diplomatic level and the government level is aware of the findings.

This is not a problem for Canada at all because, as it was mentioned by my colleagues, Canada was fully engaged with the IRRS mission at all levels of the governments and the regulatory body.

So for now that is the philosophy of the IAEA and we have tried on many occasions to do a correlation between suggestions, recommendations and even good practices. For now the Board of Governors and the IAEA itself is not willing to go in and say Canada is

number one, U.S. is number one or some other countries. They leave it up to the Member States to go and look at the suggested recommendations and mainly good practices so they can adopt the good practices as part of the regulatory framework.

So that is one of the things we will be hosting, the lessons learned of the IRRS mission, in order to render two things, so not become prescriptive as a word search for safety standards and the key point here is alignment with the safety standard and the implementation and practice with respect to the regulatory foundations in the host country itself and then for us to make improvements for the guidelines of the IRRS mission. That will be a much more, I'm going to say, effective and efficient way so that the Member States learn from the Member States who underwent the IRRS mission and introduce consistency.

The difficulty we have right now is inconsistent implementation for the review with respect to the finding itself. The findings for recommendations are bang on, so in other words there is consistency that way. It comes into the grey zone with respect to areas of improvement under suggestions.

So those are the -- it's going to be a long journey. I will not really mislead the Commission that is something that can be fixed quickly, but definitely that is one of the things that we are pushing so that there is a consistent implementation of the safety standards and a comparison, not to say who is better than the other, but it is lessons learned so that there is continuous improvement by all Member States. It doesn't matter if it's the main mission or the follow-up mission.

THE PRESIDENT: Thank you very much for that.

My second question is to Natural Resources Canada on the first finding around the need to enhance the policy around radioactive waste management.

Can you maybe expand on exactly what NRCan is doing or planning on doing both as far as the scope, the process, the timing for that?

MR. DELANEY: Yes. So it's Jim Delaney, for the record. I am the Director for Uranium and Radioactive Waste at Natural Resources Canada.

Protecting the health and safety of Canadians and the environment is the government's top priority when it comes to nuclear energy, so we are

committed to continuous improvement and welcome the IAEA'S recommendations.

In terms of the process to undertake that, the government is currently in the planning stages of this initiative. We have begun undertaking analysis of the policy framework in relation to the IAEA safety standards and we are developing an engagement plan for how we can efficiently and effectively seek the input from Canadians and stakeholders.

As part of this process, public engagement will be an integral part of the radioactive waste policy enhancement and strategy development, and responding comprehensively to the IRRS recommendation requires us to obtain a broad range of views and contributions from Canadians. We are looking to undertake that engagement starting in the fall at this point in time, but also taking into account physical distancing requirements due to COVID-19 and perhaps a larger web presence and virtual presence as well.

THE PRESIDENT: Thank you.

And I know the action plan that is attached to this CMD says the review is expected to be completed prior to the follow-up mission. Is this going to

be a four-year thing?

MR. DELANEY: It's a bit too soon to say, I would say, in terms of actual process as we are working at this time to develop the engagement plan, but I at this time don't envision it to take a full four years. It would be commencing in the fall, which is the target at this time, and allowing sufficient opportunity for members of the public to provide feedback on the policy framework.

THE PRESIDENT: Thank you very much.

Any other questions from Commission Members? I don't see any hands up, but I will give you 30 seconds.

Okay. So thank you again for the presentation. Congratulations to the team for a very successful mission and we look forward to the completion of the action plan. So thank you.

We will move to our next agenda item actually, which is -- which we can't get to until 3:15 because we are getting another set of participants for that. So we will take a break and resume at 3:15 p.m.

Thank you.

--- Upon recessing at 2:22 p.m. /

Suspension à 14 h 22

--- Upon resuming at 3:15 p.m. /

Reprise à 15 h 15

THE PRESIDENT: Good afternoon, everyone.

We're ready to resume our meeting, and the next item on the agenda is the June 2019 International Atomic Energy Agency Emergency Preparedness Review Mission to Canada. The presentation will inform us on the Mission's findings and Canada's response.

I would like to acknowledge that representatives from Health Canada are joining us for this item, including Mr. Brian Ahier, who will be presenting with CNSC staff, and several participants from the steering committee are also available for questions later.

I will turn the floor to Ms Heppell-Masys for the presentation from CNSC staff and Health Canada. Ms Heppell-Masys, the floor is yours.

CMD 20-M14

Oral Presentation by CNSC staff

MS HEPPELL-MASYS: Thank you. Good afternoon, President Velshi and Members of the Commission.

For the record, my name is Kathleen Heppell-Masys, and I am the director general of the Directorate of Security and Safeguards and co-chair of the steering committee for the IAEA Emergency Preparedness Review Mission, known as EPREV Mission, to Canada.

With me today are my colleagues Brian Ahier, acting director general, Environmental and Radiation Health Sciences Directorate at Health Canada and also the EPREV national coordinator. And also with me is Christopher Cole, the former director of Emergency Management Programs at the CNSC.

Joining us today are other members of the EPREV steering committee from Natural Resources Canada, Public Safety, New Brunswick Emergency Measures Organization, New Brunswick Power, and Ontario Power Generation.

Canada's response to the mission report and our associated management action plan will be presented

at a high level in order to give the Commission a sense of how Canada's Emergency Preparedness and Response Program measures up to the international standard, and the steps we are taking to address mission findings -- more specifically, that standard being the IAEA General Safety Requirement, Part 7: Preparedness and Response for a Nuclear or Radiological Emergency. We will refer to that document as being "GSR Part 7."

Today's presentation will follow the outline presented on the screen. First, we will provide an overview of emergency preparedness and response in Canada. We will then move through the EPREV Mission drivers, objectives, and scope, followed by the results of the mission.

Action items specific to the CNSC will also be presented, as well as the Canadian observations hosting an EPREV mission, and finally some concluding remarks.

Emergency preparedness and response involves a broad range of Canadian stakeholders. Before going into the details of the 2019 EPREV Mission, I would like to acknowledge all those who participated in the mission. This includes all federal, provincial, municipal

governments and non-government organizations, the IAEA, along with the whole international peer review team and the nuclear power plant operators whose sites were visited as part of the mission. This mission would not have been possible without the cooperation and collaboration from all these partners, so I would like to thank all of those who participated and contributed to the success of the mission.

Nuclear emergency preparedness in Canada is based on a mature and robust all-hazard emergency preparedness system that is used to manage any type of emergency requiring a coordinated response. This system reflects our governing system and differing roles and responsibilities allocated to each level of government. The system is used routinely to respond to the full range of emergencies that occur in Canada and is well understood by Canadian stakeholders.

The following slides will provide an overview of this system.

Emergency preparedness in Canada uses a bottom-up approach. Local authorities and provincial and territorial governments provide the first response to the vast majority of emergencies. Then, if an emergency threatens to overwhelm the resources of any individual

province or territory, the federal government may intervene at the specific request of the province or territory. In practice, more than 90 per cent of emergencies are handled locally or at the provincial or territorial level and do not require direct federal involvement.

A federal government institution may not respond to a provincial/territorial emergency unless the provincial/territorial government requests assistance or there is an agreement in place that requires or permits such assistance.

The provincial governments have the primary responsibility for the protection of life and property. Each province as well as the federal government have emergency management legislation that clearly articulates the responsibility for establishing emergency response plans and arrangements at the preparedness stage.

It should be noted that in the event of a nuclear emergency, the provinces automatically assume control from the beginning of the event and are the primary authority for the response.

The responsibilities during a nuclear emergency at a licensed nuclear facility fall to four main stakeholders:

- The operator or licensee is fully responsible to prevent the escalation of an emergency, return the facility to a safe and stable state, and mitigate the consequences of radioactive releases or exposure. The operator is also required through regulations to provide site information to the off-site authorities and the regulator.

- The provincial government takes the lead in the protection of its population and works closely with the local and municipal governments. The provincial government leads public alerting and is responsible for implementing protective measures such as iodine thyroid blocking agent, sheltering in place, and evacuation.

- The regulator maintains regulatory oversight of the licensee. To this end, the regulator assesses the state of the nuclear facility and disseminates relevant information too as part of the Technical Assessment Group under the Federal Nuclear Emergency Plan.

- The federal government provides support to the province as requested, assumes the role of national coordination, and communicates and coordinates with the United States, other countries, and international agencies. This role is described in the Federal Emergency Response

Plan, or FERP, under the lead of Public Safety Canada and which applies to all emergencies requiring a coordinated Government of Canada response, and the Federal Nuclear Emergency Plan, or FNEP, under the lead of Health Canada, which augments the FERP with additional arrangements to deal with a nuclear emergency.

This slide illustrates the interaction of the various players in the event of a nuclear emergency and their associated jurisdictions. A well-defined emergency response structure, strong understanding of the roles and responsibilities of each entity, clear operating procedures, well-exercised and good liaison and communications assist in ensuring a well-coordinated and effective response.

I will now turn it over to Mr. Brian Ahier to talk to use about the EPREV Mission.

MR. AHIER: Good afternoon, President Velshi and Members of the Commission.

For the record, my name is Brian Ahier and I am the acting director general, Environmental and Radiation Health Sciences Directorate at Health Canada, and the EPREV national coordinator for the EPREV Mission to Canada.

We will now turn our attention to the EPREV Mission drivers, the objectives, and the scope of the review.

Canada is seen as a world leader in terms of nuclear emergency preparedness and response and actively promotes nuclear safety and security internationally through the IAEA and the NEA.

Following the Fukushima Daiichi nuclear accident in 2011, the IAEA encouraged member states through the Action Plan on Nuclear Safety to conduct national reviews of their emergency preparedness and response through the IAEA EPREV service. At the 6th Review Meeting of the Convention on Nuclear Safety, Canada received a challenge to host an EPREV mission. In response, Canada committed to invite the IAEA to conduct an EPREV mission in Canada prior to the 7th Review Meeting. As a result, Canada became the first G7 country to commit to undertaking an EPREV.

The purpose of an EPREV mission is to appraise the host state's capacity to prepare and respond to a nuclear emergency. The objectives of the review mission to Canada are listed on this slide.

First, we wanted to demonstrate that

Canada meets the requirements of IAEA General Safety Requirements, Part 7.

Secondly, we wanted to highlight our best practices and to identify any areas of improvement.

Thirdly, through the mission, Canada would be able to ensure a high level of preparedness to protect the health and safety of Canadians.

And finally, the mission would demonstrate Canada's commitment to global harmonization of nuclear emergency preparedness and response as the first G7 country to invite an EPREV and through the communication of the mission outcomes.

Shortly after Health Canada submitted the invitation to the IAEA in February 2017 to conduct an EPREV mission in Canada, we developed a project charter to formalize the commitment of all stakeholders and established a national EPREV governance structure, as shown on this slide. Paralleling the shared responsibility of emergency management in Canada, this novel governance structure was formed to ensure all aspects of preparing and hosting the missions were completed, that a national action plan to address the findings was developed, and that a follow-up mission would be organized.

The steering committee membership includes senior officials from federal, provincial, and municipal governments and nuclear power plant operators. This committee was responsible for overseeing and directing the necessary work across all jurisdictions to prepare for the mission. The planning committees were responsible for implementing all planning activities in their jurisdictions for the mission.

This structure has been maintained to guide the implementation of the National EPREV Action Plan and preparation for the follow-up mission.

This slide outlines the mission timeline.

Canada was required to submit a national self-assessment to the IAEA through its Emergency Preparedness and Response Information System, or EPRIMS, database prior to their agreement to conduct a mission. This self-assessment was used by the IAEA to determine if Canada was ready to host an EPREV mission.

Canada's initial national self-assessment, developed through the planning committees and reviewed and approved by the steering committee, was submitted in January 2018. Based on the information contained in the self-assessment, the IAEA confirmed their acceptance of

Canada's invitation in February 2018.

An initial preparatory mission with the IAEA, the EPREV team leader, and key Canadian stakeholders was held in May 2018 to come to an agreement on the mission objectives, scope, terms of reference, mission team composition, and mission dates and schedule.

In parallel, an action plan was developed to address findings in the initial self-assessment prior to the mission. The updated self-assessment was subsequently completed and submitted to the IAEA along with the advance reference material in March 2019. A final teleconference took place in May 2019 to ensure all preparations had been agreed upon and finalized prior to the mission team arriving in June.

It should be noted that given the high quality of Canada's self-assessment, the IAEA requested the Canada make it available as a model to other member states' national authorities through the EPRIMS database, which was agreed upon by the steering committee.

As agreed during the preparatory meeting, the scope of the mission focused on emergency preparedness and response arrangements related to nuclear power plants. This included federal, provincial, and municipal levels of

government and the operating organizations.

It should be noted that the NPPs were not evaluated for their on-site emergency preparedness, which is covered under other IAEA safety standards and review missions. However, IAEA GSR Part 7 does include requirements addressing communication and coordination between the NPPs and the off-site authorities, and this aspect was included in the scope of the mission.

In order to address the diversity of the various NPP sites in Canada in terms of geography and local conditions, the Darlington NGS and the Point Lepreau NGS were chosen for enhanced focus during the mission. Point Lepreau NGS was chosen for its location with a small population base within New Brunswick. Darlington NGS was chosen for its location within the Regional Municipality of Durham, which also contains the Pickering NGS, and its proximity to a large population base within Ontario. However, as the EPREV Mission reviewed the overall national emergency preparedness arrangements, the self-assessment and advance reference material included relevant information for the Pickering and Bruce Nuclear Power generating stations as well.

The advance reference material, or ARM, is

a suite of documents provided by the host state to the IAEA in preparation for the main mission. In March 2019, Canada submitted the ARM, which contained over 90 documents from federal, provincial, municipal, and operator sources. They included legislations and regulations, regulatory documents, as well as emergency response plans and procedures. The ARM complemented and supported the national self-assessment and enabled the EPREV review team to begin to develop initial observations prior to arriving in Canada.

At the request of the EPREV team leader, Canada also prepared a detailed table cross-referencing each GSR Part 7 requirement against the specific documents and section in the ARM. This unique cross-reference was identified by the EPREV team as being a very effective tool for increasing the efficiency of the mission.

During the preparatory mission, Canada and the IAEA agreed to an 11-day mission and a 12-person team including one observer, led by Michael Scott of the US Nuclear Regulatory Commission. The team consisted of international emergency preparedness and response experts from IAEA member states as well as a team coordinator and deputy team coordinator from the IAEA secretariat. The

team included experts with familiar with federal government systems, CANDU reactor technology, and Canada-US relationships.

As agreed during the preparatory mission, to successfully perform a national review of Canada's emergency preparedness and response arrangements, the EPREV review team organized themselves into three sub-teams: one team to appraise the federal arrangements, and two teams to appraise the Ontario and New Brunswick provincial arrangements. During the 11-day mission, Canada hosted interviews and site visits in Ottawa, Toronto, Durham Region, Fredericton, Saint John, and Point Lepreau.

The interviews and site visits provided a platform for the EPREV review team to gain a thorough understanding of Canada's emergency preparedness system and arrangements through open and transparent dialogue and for Canada to promote its best practices.

I will now turn the presentation over to Mr. Christopher Cole to discuss the mission outcomes.

MR. COLE: Thank you. Good afternoon, President Velshi and Members of the Commission.

For the record, my name is Christopher Cole, and I am the former director of the Emergency

Management Programs Division at the CNSC.

In this part of the presentation, I will discuss the results of the mission.

Overall, the EPREV team indicated that Canada has a well-developed and mature nuclear emergency preparedness and response system in place across all levels of government and that Canada is ready to respond to a nuclear emergency.

In keeping with Canada's objective to solidify its contribution towards global harmonization of emergency preparedness and response, Canada has made its EPREV report publicly available in both official languages. This is an essential step in helping fulfill the EPREV objective of sharing good practices and observations with member states and interested parties. The report covers the 25 in-scope mission requirements of GSR Part 7.

It should be noted that Canada is one of the few countries that made their full report available to other member states. Links to the report can be found on the CNSC's website as well as on Health Canada's website and on the IAEA's website.

Canada's response to the mission was made public in parallel to the release of the EPREV report. In

its response, Canada recognized the importance of international peer reviews and committed to protecting the health and safety of Canadians and the environment through the development of an Action plan to address the mission findings. As well, Canada committed to host a follow-up mission in order to demonstrate the implementation of the action plan.

The EPREV findings identified a range of emergency preparedness and response findings across various jurisdictions. Canada's action plan has thus been developed, reviewed, and approved through the national EPREV governance structure. This structure will be used to track and report the progress of the actions as they are implemented by the relevant parties. Implementing Canada's action plan requires collaboration from all levels of government.

Links to Canada's action plan is available on the CNSC's website as well as on Health Canada's website.

The following slides summarize the findings of the mission and provide an overview of Canada's response.

As previously stated, the purpose of an

EPREV mission is to appraise the host states capacity to respond to a nuclear emergency against the IAEA's Safety Standard, GSR Part 7. To ensure consistency and effectiveness, the IAEA follows a published set of guidelines to conduct missions.

The 2019 EPREV mission provided valuable insights to Canada's nuclear emergency preparedness and response framework. Canada was presented with a number of good practices as well as recommendations and suggestions to continue to strengthen its capability to prepare for and respond to a nuclear emergency.

It is important to note that the number of recommendations, suggestions and good practices a host country receives is not indicative of the robustness or effectiveness of the host country's emergency preparedness and response framework and should not be considered a measure of the current performance of one system relative to any other.

The 2019 EPREV mission to Canada resulted in five good practices, six recommendations and six suggestions.

Before presenting the results of the mission, it is essential to have an understanding of the

definitions of the finding categories. Findings are reported as either a good practice, a suggestion or a recommendation. In the report, all findings reference an observation and a specific requirement from GSR Part 7.

A good practice goes beyond the fulfilment of current requirements or expectations. A good practice is identified in recognition of a specific organization, arrangement, program or performance superior to those generally observed elsewhere. It is unique or noteworthy and worth being brought to the attention of other member states as a model for excellence.

Suggestions address two types of observations: (1) the requirement is partially met but the arrangements are not entirely consistent with the IAEA safety guides on Emergency Preparedness and Response, or (2) the requirement is met but it is deemed that tangible improvements could be made to the manner in which the arrangements implement the requirements.

Suggestions contribute to improvements in emergency preparedness arrangements and capabilities.

Recommendations address aspects of the host state's Emergency Preparedness and Response arrangements that are not consistent with GSR Part 7. A

recommendation identifies a gap or inconsistency with the IAEA Safety Requirements.

Canada is proud to present the following five good practices as identified by the IAEA mission team.

First, Canada was recognized for having a streamlined process for processing financial claims after a nuclear or radiological emergency.

Second, the IAEA identified that Canada's pre-distribution of potassium iodine pills maximizes the effectiveness of this protection measure.

Thirdly, the warden service in New Brunswick was seen not only as unique and innovative, but greatly improved the preparedness capacity of the New Brunswick Emergency Measures Organization.

Next, the IAEA noted that use of social media simulators during exercises better prepared Canada to respond to misinformation on social media in the event of a real emergency.

And finally, Canada's self assessment was identified as a model for all other countries intending to host an EPREV mission.

Canada received six suggestions. The suggestions included: updating the Province of New

Brunswick's hazard assessment; revising arrangements for emergencies initiated by nuclear security events, including conducting exercises; designating medical personnel trained in the clinical management of radiation injuries in Ontario; reviewing the federal governance system for emergency preparedness and response and considering any implications for national, i.e.

federal-provincial-territorial, governance; conducting an analysis of minimum resource requirements and training qualification for response organizations at all levels; continuing the implementation of the strategy to ensure regular participation of senior officials with strategic decision making authority in drills and exercises.

Canada committed in its response to address all suggestions.

The mission also highlighted the following six recommendations.

(1) The nuclear security threat assessment should be incorporated into the overall hazard assessment.

(2) The protection strategy for off-site measures, such as sheltering in place or evacuation, should be justified and optimized.

(3) Canada should revise arrangements for

the protection of emergency workers and helpers and clarify how helpers would be used in an emergency.

(4) Ensure that there is a radiological monitoring strategy in place and that sufficient resources are available to implement the strategy.

(5) Fully develop roles and responsibilities and arrangements for the safe management of offsite radioactive waste arising from an emergency.

And finally, (6) develop arrangements to terminate a nuclear or radiological emergency including criteria and procedures for making a formal decision.

Canada committed in its response to address all recommendations.

Mirroring Canada's framework for emergency management, no single organization is totally responsible for addressing the findings from the EPREV mission.

The EPREV findings are directed to either the Province of Ontario, the Province of New Brunswick or the government at large. Actions directed to the Province of Ontario are led by Emergency Management Ontario and supported by other ministries in the province, such as the Ministry of Health.

Similarly, findings directed to the

Province of New Brunswick are led by the New Brunswick Emergency Measures Organization and supported by other provincial organizations, such as the Office of the Provincial Security Advisor.

The findings directed to the government at large include federal government agencies and the provinces and supported by the regional government of Durham, and the Nuclear Power Plant Operators.

Implementing Canada's action plan requires collaboration from all levels of government and the Nuclear Power Plant Operators.

In support of the national action plan, 83 specific actions have been identified so that the findings are all adequately addressed. Each specific action is assigned to one or more organizations in the EPREV Steering Committee.

There are eight of the 12 organizations within the EPREV Steering Committee leading or co-leading these specific actions. Representatives of these eight organizations are responsible for reporting the status of their actions to the ERPEV Secretariat on a quarterly basis.

The EPREV Steering Committee will meet

twice annually to review and guide the implementation of the national action.

The first update on the status of the implementation plan occurred at the recent EPREV SC meeting on May 26, 2020. All organizations report no major delays despite COVID-19.

The following slide specifies the actions where the CNSC is involved.

Of the 83 specific actions, the CNSC is supporting or leading 18, which address suggestions 2, 4, 5 and 6, and recommendations 1, 5 and 6.

These actions include collaborating with our emergency management and response partners to:

- (1) augment our nuclear emergency management exercise regime;
- (2) update CSA Standard N1600 requirements for emergency management programs;
- (3) hosting an IAEA workshop on recovery after a nuclear emergency, and
- (4) addressing the nuclear security and safety interface.

A Harmonization Plan Project led by the Directorate of Safety and Security was created to monitor

the closure of CNSC's actions. Emergency management program staff are working with other members of the CNSC's nuclear emergency management committee, namely Nuclear Security Division, the Directorate of Environmental and Radiation Protection and Assessment, as well as the Waste and Decommissioning Division and the Human and Organizational Performance Division to close these specific items.

Resolution of these actions will also involve Health Canada, Public Safety, Natural Resources Canada, the Province of Ontario, and the Province of New Brunswick.

In order to address the recommendations and suggestions, the EPREV steering committee structure will remain in place up to and including the period of time covering the follow-up mission to oversee the completion of all actions. The status of the implementation of Canada's action plan will be updated quarterly. The EPREV Steering Committee will meet twice annually to review and guide the implementation of the national action plan.

Canada looks forward to inviting the IAEA to a follow-up mission to demonstrate the improvements made as a result of actions taken to address the EPREV findings.

The National Action Plan was developed and approved by the steering committee in November 2019 and published in February 2020. Since then, several activities have taken place to address the mission report findings.

To address suggestion number 2, the next full-scale priority national exercise will consider a nuclear security component.

CSA Standard N1600, general requirements for nuclear emergency management programs, is presently being updated to include requirements for designating medical personnel trained in the clinical management of radiation injuries, which will assist in addressing suggestion number 3.

A human factors review of the CNSC's response to the full-scale nuclear exercise, Huron Resolve, was conducted in 2019 in response to suggestion number 5.

CNSC and Health Canada co-hosted an IAEA Regional Workshop on the Termination of a Nuclear Emergency in support of recommendation number 5.

And finally, a decision made to transform the CNSC's draft REGDOC 2.10.1 Volume 2 into a Health Canada Guidance Document, which will, in part, address recommendation number 6.

I will now pass the floor back to Kathleen Heppell-Masys, who will highlight what we learned while preparing for and hosting the 2019 EPREV, mission as well as some concluding remarks.

MS HEPPELL-MASYS: The next two slides highlight some of the observations while hosting the mission.

During the initial phase, it was recognized that Canada's emergency response system involves many organizations at various levels of government. As such, extensive engagement, consultation and negotiations were required early in the initial phase to ensure all participants were on board and in agreement with the mission objectives.

The keys to success included:

First, the establishment of the National EPREV governance, which enabled effective leadership and the Project Charter solidified commitments from all participants. As well, the IAEA GSR Part 7 workshop held in July 2017 provided Canada and the IAEA a forum to discuss the mission requirements and assisted Canada in preparing an open and honest self-assessment.

The participation of NPP operators allowed

for a comprehensive review of the national Emergency Response program.

Collaborations from the communications experts from the participating organizations brought synergy and alignment to the development of communication products. These products, both internal to the organizations and external to the public, were essential for demonstrating the EPREV's commitment for openness and transparency throughout the mission.

And finally, the IAEA's Emergency Preparedness and Response Information Management System proved to be a useful tool for consolidating self-assessment information from stakeholders.

A correction was made to this slide. The words "the review" were added to the fourth bullet.

A well-documented and candid self-assessment and advanced reference materials cross-referenced against GSR Part 7 requirements proved to be helpful in assessing effectiveness and efficiency, and guiding discussions.

The international experts were well prepared, had read the advanced reference materials, and were hence able to ask appropriate questions.

Canada's willingness to conduct their interviews in an open, genuine and unscripted manner led to an environment of collaboration and professionalism. This was supplemented with support from the senior executives during the final negotiation phase, resulting in a quick convergence on the mission findings.

Canada has the following suggestions for EPREV review teams.

Given how each member state is governed uniquely, it would have been advantageous if the EPREV team had become familiar with the host country's governance system prior to the mission.

Considering the large number of participants that needed to be interviewed from across the multiple jurisdictions, it would have been helpful for the EPREV mission to identify areas of concern in advance of the mission.

I would like close the presentation with a summary of highlights from the mission.

I am very proud to mention that the Canadian Nuclear Society awarded the EPREV Planning Committee the "2020 John S. Hewitt Team Achievement Award". This award recognizes the recipients for "outstanding team

achievements to the advancements made in the nuclear field in Canada".

The success of the EPREV mission to Canada is attributed to the demonstration of dedicated efforts and excellent collaborations from all levels of government and the nuclear power plant operators in Canada. Their genuine collaboration reflects the commitment of all national stakeholders in working towards a Canadian nuclear emergency management program that will ensure the safety and security of Canadian citizens and the environment in the event of a nuclear or radiological emergency.

Canada was a world leader for the first G7 country to host an EPREV mission and fulfilled the challenge under the Convention of Nuclear Safety.

The mission was a large success due to the collaboration and contributions of federal, provincial, and municipal partners and operators.

The EPREV mission highlighted five good practices, six recommendations and six suggestions for Canada to continue to strengthen its emergency preparedness and response system.

Canada carefully considered these findings and committed to addressing all recommendations and

suggestions. Those commitments were made clear in Canada's response to the EPREV report.

In the spirit of openness and accountability, Canada has made the IAEA's EPREV mission to Canada report and Canada's response to the report available to the public, in both official languages.

Finally, through Canada's team's extensive collaboration, both the preparation for and the conduct of the EPREV mission strengthened relationships in the emergency preparedness and response community, and therefore has enhanced our overall readiness.

The overall success of the EPREV mission to Canada was summarized by the IAEA as follows, and I quote:

"The clear, focused and effective preparation and support for, and the coordination of, the EPREV mission were exemplary and constitute a positive model for Member States who may consider hosting an EPREV or other IAEA peer review service."

This concludes our presentation, and we are now available for any questions the Commission may

have. Thank you.

THE PRESIDENT: Thank you very much for that excellent presentation.

Let's open the floor up for questions, starting with Dr. Lacroix.

MEMBER LACROIX: Well, thank you very much, staff, for this excellent presentation on EPREV mission.

One of the results that came out from the EPREV mission was that Canada has a well-developed and mature response system. And I cannot help wondering would they have -- would the conclusion that they reached be different had their mission taken place after the January 12 false alert episode.

And the next question is that will they take into account this episode in the follow-up mission?

MS HEPPELL-MASYS: So this is Kathleen Heppell-Masys, for the record.

The EPREV mission focused on the arrangements and capabilities to prepare for and respond to nuclear and radiological emergencies, and that -- the interface was key in this regard. So we believe that the -- the event that we were discussing earlier today was

to do with a communication matter, while this EPREV focused on the emergency of a nuclear operator triggered by an event at a facility, so likely the results would not have changed.

But perhaps I can -- I would ask perhaps my colleague, Christopher Cole, to add to this.

MR. COLE: For the record, my name is Christopher Cole.

I'd like to add to what Kathleen has said in that the mission focused on GSR Part 7, so that mission was a line-by-line step through the requirements of the IAEA to see how Canada was meeting those requirements. And the mission showed, quite successfully, that Canada was, in fact, in compliance with GST Part 7 in line with the suggestions and recommendations that came forward.

So I don't think that the mission that would take place after the false alert would provide any other clarifications, but it -- any different results, but it may highlight some indications where communications is important and, of course, that we need to improve in that area.

And that's something we did through a self-assessment, and we demonstrated that this morning,

that whenever you have exercises or when you have real emergencies that require the activation of operations centre, you're always going to learn something new, and we continue to look forward to learning more as we move along.

MEMBER LACROIX: And what about the follow-up mission?

MR. COLE: So Christopher Cole, for the record.

So the follow-up mission is going to be based on the results of what took place in the initial mission, so they may or may not bring that up. But what happens is that we have a complete mission report and that we're going to address that report, so it's not likely it's going to be brought up.

THE PRESIDENT: Dr. Berube.

MEMBER BERUBE: Thank you for that report.

I have a question with regard to implementation of recommendations. There's a number of them here, obviously.

Specifically, how do you go about verifying and validating that basically these things have been implemented? Could you just run me through your process by which this is done?

MS HEPPELL-MASYS: This is Kathleen Heppell-Masys, for the record.

So as was mentioned during the discussion, we do have in place a steering committee that meets twice a year to go over all the 83 actions we have undertaken. Those actions will be followed very closely by the steering committee and all the stakeholders, the participants at the steering committee will have an opportunity to address the status of progress on those actions, and certainly we will follow up on those. And prior to inviting the IAEA for a follow-up Mission we will make sure that all those items are closed to a similar process to what was undertaken for the conduct of this Mission.

And as well, when we conducted the self-assessment, which was a very candid self-assessment, it allowed us as well to address things that we knew needed some work, so we promptly took actions on and were able to address all those issues as well to make sure we were ready to host the Mission.

So, yes, so the process will be going through the ownership of the stewardship of the Steering Committee.

In addition, as Christopher Cole

mentioned, for the CNSC's action we will be -- we will have an additional layer of oversight which will be under this Harmonized Plan Steering Committee.

Thank you.

MEMBER BERUBE: And who has final setup authority of any of these things? Who decides whether this is done or not? There's got to be somebody; is it the Steering Committee or is it --

MS HEPPELL-MASYS: Yeah, the Steering Committee will be the deciding factor. And maybe I can ask Brian just to add a little bit because he's also co-chair of the Steering Committee.

MR. AHIER: Brian Ahier, for the record.

Yes, to follow up on the information from Kathleen and Chris, there is a detailed action plan that has been developed. The Steering Committee will be meeting bi-annually to review the status of that, and we'll also receive quarterly updates secretarially on the status of those actions.

I think it is also important to recognize that each organization involved in the action plan has developed their own detailed implementation plan and those actions are integrated into the Operational Work Plans of

each organization that allows another level of tracking.

And, thirdly, we will be doing annual summary updates to the IAEA. So that will validate and ensure that the progress and the closure of the action plan is validated.

In terms of validating the robustness of each action that is partly implemented, in addition to that, we still maintain a robust exercise program and our plans, procedures, arrangements, and protocols will continue to be exercised in both annual exercises as well as periodic national-level priority exercises.

THE PRESIDENT: When do you expect the follow-up mission to take place?

MS HEPPELL-MASYS: I thought -- well, certainly upon closure of all those actions. And now I think, Brian, I just want to make sure I got this right, I think we're looking at 2022, 2023?

MR. AHIER: Yes.

THE PRESIDENT: Thank you.

MR. AHIER: Yes.

THE PRESIDENT: And that's when you expect to have implemented the entire action plan by then, including whatever the new Standard is, or update of the

Standard?

MS HEPPELL-MASYS: I'm not aware of the update to the Standards. I'm sure Brian can -- this is Kathleen Heppell-Masys, for the record.

So, this would be we want to make sure that we have completed all our actions before inviting the IAEA subsequently to the -- to the follow-up Mission.

But in terms of updates to the Standard, I would turn this question to Brian who is on the committee at the IAEA to that effect.

MR. AHIER: So Brian Ahier, for the record.

Just in terms of clarification are you referring to updates to the IAEA Safety Standard?

THE PRESIDENT: No, let me be clear about my question. My question was, when is the follow-up Mission? I was told it's when you expect the Action Plan to be fully implemented. And as I recall, some of the actions in the Action Plan was an update to a CSA Standard, a transfer of a REGDOC to a Health Canada document, and you expect all of that to happen in this three-year window.

MS HEPPELL-MASYS: Thank you. Thank you for the clarification. That's very helpful. I'm sorry

about that.

So I think I'll proceed in a three-step approach here, so I will turn to Chris Cole to update us on the CSA Standard updates and then to Brian again to the Recovery Documentation that we can talk about it in the presentation.

THE PRESIDENT: Sorry, I don't need details -- sorry, Ms Heppell-Masys, I don't need details on that. I just needed the timeline for the follow-up and do you expect all these actions to be completed prior to that?

I just find normally a REGDOC takes us four or five years. If you're going to be this nimble and do it within two years, excellent. I just want to get that reassurance.

MS HEPPELL-MASYS: I do not know the timelines for the CSA Standard, but that would be the intent. But I'm sure Chris Cole could provide us with just a little bit of refinement on that answer, from our perspective.

MR. COLE: For the record, this is Christopher Cole.

The CSA Standard has gone under review this last winter. It's now out for public consultation and

it should be implemented within the next few months.

THE PRESIDENT: Thank you.

Dr. Demeter.

MEMBER DEMETER: Thank you, very much.

It's an excellent report. I really appreciate the proactive approach to being reviewed and having someone else look in your closet and tell you what's going on. I think that's a very positive aspect.

The one thing I found really interesting, at every nuclear power plant hearing and Regulatory Oversight Report, I asked the very specific question as to whether there is a triage hospital or receiving entity that has sufficient medical training to deal with radiation emergencies, and the answer I always get is yes. They've either taken the Health Canada METER Course, the Oak Ridge Advanced Radiation Medicine Course, or something similar, both for nurses and physicians.

In this report, based on slide-24 and the follow-up on 29, it says something different, so help me reconcile the answer I always get from the operator and from the community of, "Yes, we're well prepared to manage radiation medicine issues," and here I'm seeing that that wasn't the case, from the reviewer.

I'm not sure who wants to take that first.

MS HEPPELL-MASYS: Yes, so I think here -- I think there may be a little bit of clarity that can be added to this nuance here, and I think what I'll do is, I'll turn it to -- to Brian Ahier to speak to this point, and then Chris can add -- Chris Cole could also, once again, speak about the CSA Standard and what work is being done to address this -- this suggestion.

So over to you, Brian.

MR. AHIER: Thank you. Brian Ahier, for the record.

This particular aspect of the EPREV relates to GSR Part 7, Requirement Number 12, which is managing The medical aspects of an emergency, which clearly falls within the realm of the provinces and territories with support provided by the Government of Canada for training and other aspects, as necessary.

With respect to this particular observation it was not so much that the provinces and territories are not ready or that there are no facilities; it was just that in the case of Ontario there did not seem to be a documented roster of designated individuals to support that even though such capacity does exist. There

are many individuals that have gone through, for example, the Health Canada METER Training, have taken other sorts of training and so they -- and are -- the framework for that certainly in the case of Ontario is described in Ontario's Radiation Health Response Plan. So, I believe it's more of an administrative issue that that particular piece of documentation is - was not available and the suggestion is that they just complete that part of it.

THE PRESIDENT: Thank you.

Mr. Jammal.

MR. JAMMAL: Thank you, Madam Chair. Just to complement my colleague's answer, it's for Dr. Demeter's suggestion is as Mr. Ahier mentioned or - sorry Brian - the key point here, it's a suggestion as it was mentioned, a suggestion means you are aligned with the Safety Standards and that it's required minor adjustments, when I say it is continuous improvement as Mr. Ahier mentioned, that it's going to be an administrative documentation process.

THE PRESIDENT: Okay, thank you.

Dr. McKinnon.

MEMBER MCKINNON: Thank you. That report is very comprehensive; I enjoyed it and it certainly represents a great deal of work by everybody involved. So,

my question is in the context of how to assess good emergency preparedness and identify best practise. And it was commented earlier in the day that a good plan on paper does not always translate into good performance in an actual emergency, and so not all best practises and plans will have been tested. And in this case experience is often a very good guide to help here.

So my question is, Does IAEA maintain a global repository of any incident cases, minor and major, post-mortem analysis to help identifying best practises for Emergency Response, and has experience from related industries been incorporated into Emergency Preparedness Plans?

MS HEPPELL-MASYS: This is Kathleen Heppell-Masys, for the record.

I'm going to turn this to Chris Cole, the Emergency Management Programs Director. All those events are -- any events is registered by the IAEA. Any good practises is also registered by the IAEA. And in this instance the advanced preparedness material, the advanced material that we provided for the self-assessment was also one that was shared with the IAEA Member States -- the Member States, and was put on the system.

With regards to good practises, I'm going to again, just for more specific ones that you're looking for, I'm going to ask Chris to comment on that.

MR. COLE: So Christopher Cole, for the record.

I'll add a bit of colour to what Kathleen has said, but I'll drop it back over to Brian Ahier because he's the Canadian representative on the Emergency Preparedness and Response Standards Committee at the IAEA. But mentioning that organization, that's a group where international parties come together, share their experiences, and develop standard at the international level that are then implemented by the Member States. So, it's a very good organization for sharing experiences learned, developing standards that are very useful, and then using those standards in the EPREV Missions that take place around the world.

But I'll ask Brian if he can make a couple more comments on that being the representative from Canada.

MR. AHIER: Thank you. Brian Ahier, for the record.

So, as noted, the IAEA does a lot of - undertakes a lot of activities in this particular area and

does have various committees including the Emergency Preparedness Standards Committee on which Canada actively participates.

It takes into consideration lessons learned and observations coming out of past events in order to inform future standards. So, that is one way in which the experience, good practise, bad practise, observations from past events will be incorporated into future iterations of relevant safety standards.

However, in addition to that, the IAEA Secretariat itself produces a series of reports following significant events that capture the history of the event, how it was responded to, and lessons learned coming out of that. They are lower level documents, but all of that experience eventually is taken up, discussed at the international level, and is incorporated as appropriate into future iterations of the Safety Standards.

THE PRESIDENT: A question for you, Mr. Ahier. Given one of Canada's objectives was to contribute to the global community wanting to do a better job at emergency preparedness and us being the first country, G7 country, to go through that, have others been encouraged to do an EPREV Mission given the value we have found in having

participated in it, do you know?

MR. AHIER: Yes, thank you. Brian Ahier, for the record.

Well, other countries definitely have been -- are now more interested in conducting EPREV as they were previously, and I think there were several countries waiting on the sidelines, they wanted to see the experience of Canada going through this. In fact, for our EPREV Mission we had an observer from Japan as they were themselves interested in hosting a future EPREV and other experts who participated on the EPREV Review Team were also interested in carrying back that experience back to their own countries in order to facilitate future decisions on their own EPREV Missions.

In addition, we participate in a range of follow-up technical meetings and conferences that the IAEA has been hosting on various peer review services to share our experience, and there's always very good interest from other countries on how we managed it and what our experience was, and we always encourage those participants to undertake an EPREV.

THE PRESIDENT: Okay, thank you very much. Commission Members, anyone with any

additional questions? I'll see if there are any hand up.

I'm not seeing any.

Thank you again for an excellent presentation. Congratulations on the award from the CNS, a great recognition for some really splendid work done. So, thank you again.

Shall we take a break, or are we ready to go?

MR. LEBLANC: We're ready to go.

THE PRESIDENT: Okay. We'll move on to our next agenda item then.

Our next item is the Event Initial Report regarding an exposure above regulatory limit of a Nuclear Energy Worker at Alberta Health Services, as outlined in CMD 20-M17.

I note that representatives from Alberta Health Services are joining us remotely to be available for questions.

I will turn the floor over to CNSC staff. Mr. Faille, do you have anything you want to add before we move to questions?

MR. FAILLE: Thank you, Madam President, and good afternoon. My name is Sylvain Faille, and I'm the

Director General -- Acting Director General of the Directorate of Nuclear Substances Regulations. And with me today are staff from the Radiation Protection Division, the Operations Inspection Division, and from the Nuclear Substances and Radiation Devices Licensing Division.

We are here today to present an event that involved a dose to an individual above regulatory limits.

On November 27th, 2019, the CNSC was notified by the Radiation Safety Officer of Alberta Health Services that a nuclear medicine technologist was reported to have exceeded the regulatory limits based on their dosimeter results from the third quarter of 2019.

The notification came through Landauer, the dosimeter service provider. Once the licensee received the dose notification the technologist was immediately removed from work that could further contribute to their radiation dose as required by the Radiation Protection Regulations.

The reported dosimeter results were as follows:

For the body, 56.91 mSv.

For the Lens, 174.9 mSv.

And Shallow, 334 mSv photon.

Upon receipt of this information the Radiation Protection Specialists from the CNSC were consulted and requested to review the information.

The licensee launched an investigation into the possible causes of the high dose reports as it was suspected to be a non-personal dose.

The dosimeter reports received from Landauer from the third quarter of 2019 indicated an anomaly in the badge reading. As part of the investigation the licensee asked the badge to be re-read by the dosimetry service provider. In addition, the licensee looked at the work practise events during and after the recording period and whether other factors such as badge handling that could have caused an elevated badge exposure. While no specific cause was identified, the licensee concluded based on the results of the re-read badge that the most likely scenario was localized contamination on the dosimeter with nuclear substances handled by the technologist, either Fluorine-18 or Iodine-131.

This scenario was supported by those reconstruction calculations which were reviewed by CNSC staff for accuracy.

The work scheduled for the technologist

was reviewed by the Radiation Safety Officer and compared to the other technicians in the department as well as his dose records over the last five years. There were no increases in hours worked or additional shifts worked in comparison to other staff.

Historical dose reports for the individual were also reviewed from 2015-2018. This review concluded that the workload/dose patterns for this kind of work for the past years is well below regulatory threshold as it revealed no yearly dose accumulation above 1.4 mSv per year.

The most probable scenario is that a small amount of Fluorine-18 contaminated a glove which accidentally came in contact with the dosimeter thus providing the contamination. However, this cannot be confirmed.

Based on the results of the investigation, it is likely that the dosimeter result is from a non-personal exposure to the dosimeter.

The worker did not exhibit any health effects and none are expected as a consequence of this event.

The licensee requested an authorization for the worker to return to work, to the CNSC, and the authorization was issued on December 20, 2019.

This concludes my presentation. And staff are available for any questions you may have.

Thank you.

THE PRESIDENT: Thank you very much for that.

Alberta Health Services, do you want to make a statement now or do you just want to wait for any questions we may have?

MR. LEE: No, we can wait for any questions, thank you.

THE PRESIDENT: Okay, thank you.

Well, then let's open the floor to Commission Members for questions, and we'll start with Dr. McKinnon.

MEMBER MCKINNON: Thank you. This is a very puzzling event, and what struck me was there are a lot of words like, you know, "maybe" and "likely" involved, you know because the conclusion was not definitive. So, in the list of tasks for the licensee I didn't see anything in connection with the Health technician. So, considering the

uncertain cause for the dosimeter contamination, has there been any planned periodic health monitoring for the technician involved just as a precaution?

MR. LEE: This is James Lee.

No specific plans going forward.

MEMBER MCKINNON: So you are completely certain there will be effects? There's none observed now which was in the - you noted that. But could there be anything in a few months' time if there was any real contamination, if your hypothesis is not correct?

MR. LEE: The technologist is still currently working. We will be in touch with him constantly as he's working, so if there is anything specific that shows up during that time we'll be aware of this. But none - nothing is anticipated.

THE PRESIDENT: Well, maybe we can ask staff the same question. If the dose is real as measured by the dosimeter would one expect any -- would one observe any health impact of that, any symptoms?

MR. FAILLE: For this one, I would ask a representative from our Radiation Protection Division to answer the question.

MS PURVIS: Good afternoon, it's Caroline

Purvis, I'm the Director of the Radiation Protection Division.

So if the dose was real on the dosimeter, we would not expect to see any health effects as a consequence of the shallow dose. It's well below thresholds for any kind of response.

With respect to the body dose, any health effects would not be discernible for -- in relation to the normal incidences of cancers.

I should make a note that although the lens dose is registered here, this particular technology is not licensed in Canada, so we would not put a lot of credence or we wouldn't have any reason to believe that this particular dose is reflective of the lens dose. So in that regard that might not be very clear, so please ask for further clarification if necessary.

But levels, at that level, we would, again, not expect to see any -- any health effects in the lens.

THE PRESIDENT: Thank you very much for that, so then it makes sense. I mean there is little benefit in monitoring for any health effects.

Dr. Lacroix.

MEMBER LACROIX: So from what I gather, the case is closed. There's no further action needed here; am I right?

MR. FAILLE: Sylvain Faille, for the record.

That is correct.

THE PRESIDENT: Is that really correct? What about awaiting a dose correction request from the licensee?

MR. FAILLE: Sylvain Faille, for the record.

THE PRESIDENT: A dose change request?

MR. FAILLE: In terms of the event itself, the event is closed. It's now up to the licensee to determine if they want to proceed with the dose change request for the individuals, but so far we have not received any. That might also be linked to the fact that we couldn't conclude precisely if that was a true non-personal dose or not based on all the analysis. So we may not get one. It depends on the licensee if they decide to go forward or not.

THE PRESIDENT: Well, why don't we ask the licensee. What are your next steps around this?

MR. LEE: Hello. This is James Lee, the Radiation Safety Officer.

At this time the technologist has not requested a dose correction given that he may be -- he is nearing close to retirement time, so no request has come forward formally.

THE PRESIDENT: Yes, but does the request come from the worker or is it you to decide and make that determination that is this dose accurate or not?

MR. LEE: James Lee again.

We could make the request for the dose correction, although it is uncertain if that would proceed given the circumstances that we can't definitely prove that the dose was non-personal. So it's possible that we could put forth a dose correction request, but whether that would proceed, I don't know.

THE PRESIDENT: I am puzzled by your response. What I am seeing in this report is it's most likely not a real dose. You can't expect the worker to be the one deciding, well, I want a dose correction. That is for the experts to make that determination. And it is important that official dose records are as accurate as they can be. A lot of epidemiological studies, et cetera,

are based on that. So yes, the CNSC may finally make the decision on whether this dose is right or not, but should you not be the ones making that request after you have assessed whether -- and based on your investigation what you believe the right dose is and then proceed with that?

CNSC, can you please comment on that?

What is our expectation of licensees in this?

MS PURVIS: Caroline Purvis, for the record.

In most circumstances where there is evidence to support a non-personal dose, our recommendation is for the licensee to pursue a dose change request. In this particular circumstance, because it is, as Dr. McKinnon indicated, so puzzling, we have left -- we certainly would entertain looking at a dose change request should it be submitted, but the licensee would have to provide an alternate dose with supporting evidence.

I just would like to go back to the note about the worker. The worker has to sign the dose change request, so it is a joint request from the licensee as well as the worker signing that they concur with the new dose that is being proposed.

THE PRESIDENT: Thank you for that.

So who at the end of the day wants to confirm the integrity of the official dose on the worker's dose record? That is of value to more than the worker and the licensee.

MS PURVIS: Caroline Purvis.

From the CNSC's point of view, we would like the doses to be as accurate as possible. That is why we license dosimetry services to ensure the accuracy and precision. In events such as this one, we would again like the dose to be as accurate as possible, that is the personal dose, not the non-personal dose. The licensee would have to do their part to establish what that actual personal dose was if this was not real.

THE PRESIDENT: I'm sorry to belabour this, but I read in here the CNSC staff is in agreement, all likelihood unknown personal dose, but I guess -- would the CNSC want additional evidence before they are convinced that this is a non-personal dose, that what has been presented so far is not sufficient?

MS PURVIS: Caroline Purvis, for the record.

I think from my perspective, having worked in nuclear medicine for 10 years as a technologist, a dose

at this level is essentially unheard of. Anything is possible of course, but this licensee has not indicated that anything unusual happened during that quarter, that the exposures patterns for the worker were similar to -- the work patterns were similar to other technologists in rotation. So all evidence leads to the fact that this was an anomalous reading of the dosimeter and although there could be many reasons why the dosimeter has that anomalous reading, given the type of work that is undertaken in nuclear medicine using open source materials, contamination occurs not infrequently and it is quite possible. And to me that is the most reasonable and supportable reason for seeing this dose, although it is curious why it was not detected, because it should have been through routine monitoring of the person's hands, monitoring of the workplace, et cetera, and the licensee does not identify any of those types of events during that quarter.

THE PRESIDENT: Okay, thank you. I'm sure we will get someone else to elaborate on some of these questions.

Dr. Berube...?

MEMBER BERUBE: Thank you for your report. I am a little concerned as well with this because I think

this is about the third or maybe fourth time we have heard of a mystery dose issue in the last couple of years and at what point do we actually send in an independent team to take a look at processes and look at dosimetry and figure out whether -- you know, we need to get to a point where we have a high probability of what has happened on the site and this one feels kind of, yeah, okay, maybe it's not, it's probably not, but we are not certain, you know. This makes me a little uncomfortable, especially when we are talking fairly significant dose levels. We have seen that with other issues, I think it was with the Air Canada situation, too, where mystery doses have shown up.

So talk to me about the CNSC process of dealing with mystery doses. How do you actually investigate this? How do you determine what that is? How do you actually put a probabilistic number against what is happening and how do you make that safety case for returning someone to work when you're not certain?

MR. FAILLE: Sylvain Faille, for the record.

For your question about the return to work and all of the aspects related to the dose records themselves, I will pass the question to Ms Caroline Purvis.

In terms of the regulatory activity and compliance, for licensees we would take into account those kinds of reports and any other events as an indicator for planning our annual compliance inspections to various licensees and those would be triggers to either increase the frequency or their place on the inspection plan for the year to look at the various aspects of their program and that is one of the indicators that we use.

And I would pass the information to Caroline for the dose records themselves.

MS PURVIS: Thank you.

So when we are looking at the return to work process, so that is an authorized process by a Designated Officer. I am one of four at the CNSC that reviews these requests. So as specified in the *Radiation Protection Regulations*, if there is evidence to suggest an exceedance of a dose limit, the licensee has to take certain actions. One is to remove the person from work that can add to their dose, conduct an investigation, identify corrective actions that can prevent such a reoccurrence, and at such time that they believe that they have put safety measures in place they can request a return to work of that individual. This will be assessed as part

of the investigation. Radiation protection specialists will look at the circumstances of the investigation alongside DNSR inspectors and licensing specialists.

For our part we are looking at does the dose reconstruction for example in an event such as this make sense, does the licensee have all the information available, is there a risk to the individual for a return to work? Those kinds of considerations would be taken into account in the return to work process. That could look like specific conditions for example for the return to work, including medical monitoring, prorated dose limits, and it would be a case-by-case basis.

MEMBER BERUBE: So just to add to that, I mean it sounds to me like this is -- there is a bit of a probabilistic model, a bit of a judgment call on this. How do you make a final decision? Obviously you have been at this for a while. How do you say yes or no in the end?

MS PURVIS: I think it's important to reflect on the international framework for radiation protection. We have heard a lot about that today and I think in this regard the CNSC is very much aligned. So the IAEA indicates that an exposure above limits is not a reason to prevent a worker from returning. There are

mechanisms in place to allow someone to continue to return to work provided their health and safety is not compromised.

We also have to recognize that dose limits are set well below the threshold where we would expect to see any health effects incurred by workers.

But you are right, there is judgment, there is -- we have to look at each circumstance individually. In this particular case I have personally the benefit of having worked in that industry, so to me this just doesn't -- it doesn't make sense that it's a personal dose.

THE PRESIDENT: Okay. Well, let's turn to someone who also has firsthand experience in that part of the business.

Dr. Demeter...?

MEMBER DEMETER: Thank you.

First of all, yes, when I looked at CNSC's actions and the return to work authorization was issued on such and such a date, a large part of that return to work authorization was based on probably the belief from CNSC staff that it was highly unlikely that this was due to a personal dose versus a non-personal dose.

So for the authentication of the registry, whether it's a cancer registry or a dose registry, I think it is really important to have the data validated that goes in that registry. In fact, part of the return to work means we don't think he got this dose and part of that is accepting that if you have reached that conclusion to the point where they can return to work despite exceeding an annual dose limit, I would strongly suggest that a dose correction be made.

Now, this was an OSLD device, which is good in this case because it can tell the difference to a certain extent between a static contaminated dose and a random dose from exposure and I think that's what the irregular was in the note that it said there.

So the two questions I have about this scenario is you talk about the regular exposure being consistent with a beta-emitting isotope, either I-131 or F-18. If it was I-131, was there any evidence from thyroid monitoring that there was any exposure?

And the second question is, you have a ratio now between body, lens of eye and shallow dose. Does that ratio between the three of them make sense with these two isotopes? Because they are different attenuations and

if you have a fixed contamination it should give you the same proportion every time if it's a static dose.

Oh, and the last thing, sorry, is I agree that there is no deterministic threshold that has been exceeded here, so from a health perspective this is way in the low stochastic range.

THE PRESIDENT: So shall we ask CNSC staff first and then Alberta Health Services can add their comments to Dr. Demeter's questions.

MS PURVIS: Caroline Purvis, for the record.

I will defer to the licensee to respond about the thyroid uptakes, but it is my understanding just based on my recollection that there was none. There was no evidence of any uptakes, but Alberta Health Sciences to confirm.

With respect to the pattern on the OSLD, when you look at -- for the benefit of others, perhaps we will just define what a static exposure is. So when you look at the imaging filter which is inside of the OSLD, there are different types of materials that absorb the radiation differently and then the licensee can make a determination based on the measurement of each of those

different materials what the exposure pattern is and what the dose is, using algorithms and conversion coefficients.

When they look at the filter inside the dosimeter, they can also look through the reread at the exposure pattern. The static exposure image essentially indicates that the dosimeter may not have been worn at the time of exposure, so unlikely that it is a personal dose, and it is usually fairly -- it has a distinct pattern on it and it is usually consistent with an accidental exposure of the dosimeter.

A dynamic exposure is one where you see differences because the person is moving as they wear the dosimeter and you are going to see an irregular -- a more diverse pattern on the filter.

When they did the reread of this particular dosimeter, it looked to be almost like a combination of both. So there is a certain quadrant of the imaging filter where it is more consistent with a static exposure complemented by a dynamic exposure, which again puts some credence into the fact that there was probably a single incident with a droplet of a contamination on that corner, complemented by the individual wearing the dosimeter for the rest of the monitoring period.

THE PRESIDENT: Thank you.

Alberta Health Services...?

MR. LEE: Yes. James Lee, Radiation Safety Officer.

During the period, the third quarter that the technologist wore this particular dosimeter, he did actually proceed to give out five I-131 therapies during that timeframe. They are hyperthyroid dose treatments, 506 MBq maximum. There were no issues reported with any of the therapies or any of the patients that he treated and the thyroid monitoring recorded no incidents, so there was no uptake at all that was recorded.

THE PRESIDENT: Okay. Thank you.

I have a question slightly different than what we have been pursuing and it's around the timeliness of notification to the Commission of this event.

So staff was aware of this in November and officially there has been exceedances of dose limits and the first the Commission heard about this was in June. So maybe I will get staff to comment on the timing of the notification, please.

MR. FAILLE: Sylvain Faille, for the record.

As you mentioned, President Velshi, we were notified on November 27th of the event and from November until January we were still working on the details. Even though we had the return to work for the worker completed, we were still investigating -- continuing the investigation on the report. And after January there was some internal discussion also on the information in the EIR which led to the delay in sending it to the Commission Member for the presentation at this Commission meeting.

THE PRESIDENT: Let me ask you this a little differently, Mr. Faille.

In hindsight, should you have sent it to the Commission in January?

MR. FAILLE: The answer is yes, it should have been. We were trying to get it out in January or early February at the latest.

THE PRESIDENT: Okay.

Commission Members, any other questions? Comments?

I'm not seeing any hands up, so, Alberta Health Services, the ball is in your court on whether you want to pursue a dose change request and I think you have heard from staff where their thoughts are and what would be

required, but of course -- and you have heard from the Commission our thoughts around ensuring the integrity of the dose information system.

So thank you for informing of this, thank you for being here today to answer our questions.

That takes care of that agenda item and this actually concludes the public meeting of the Commission for today. The meeting will resume tomorrow at 9:00 a.m.

Thank you all for your participation.

Bonne fin de journée.

--- Whereupon the meeting adjourned at 4:45 p.m.,
to resume on Thursday, June 18, 2020 at 9:00 a.m. /
La réunion est ajournée à 16 h 45, pour reprendre
le jeudi 18 juin 2020 à 9 h 00