Canadian Nuclear Safety Commission

Commission canadienne de sûreté nucléaire

Public meeting

Réunion publique

December 15, 2021

Le 15 décembre 2021

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

via videoconference

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

par vidéoconférence

Commission Members present

Ms. Rumina Velshi
Dr. Sandor Demeter
Dr. Marcel Lacroix
Dr. Timothy Berube
Ms. Indra Maharaj
Mr. Randall Kahgee

Commissaires présents

Mme Rumina Velshi
Dr Sandor Demeter
M. Marcel Lacroix
M. Timothy Berube
Mme Indra Maharaj
M. Randall Kahgee

Assistant Secretary:

Ms. Kelly McGee

Secrétaire adjointe:

Mme Kelly McGee

Senior General Counsel:

Ms. Lisa Thiele

Avocate-générale principale :

Me Lisa Thiele

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by videoconference / par vidéoconférence

--- Upon commencing on Wednesday, December 15, 2021 at 9:00 a.m. / L'audience débute le mercredi 15 décembre 2021 à 9 h 00

Opening Remarks

THE PRESIDENT: Good morning and welcome to this 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 our participants today are located in many different parts of the country. I will pause for a few seconds in silence so that each of us can acknowledge the Treaty and/or traditional territory for our locations. Please take this time to provide your gratitude and acknowledgment for the land.

--- Pause

LA PRÉSIDENTE : Je vous souhaite la

bienvenue, and welcome to all those joining us via Zoom or webcast.

I would like to introduce the Members of the Commission that are with us today, remotely: Dr. Sandor Demeter, Dr. Marcel Lacroix, Dr. Timothy Berube, Ms. Indra Maharaj, and Mr. Randall Kahgee.

Ms. Lisa Thiele, Senior Counsel to the Commission, and Ms. Kelly McGee, Commission Assistant Secretary, are also joining us remotely.

I want to take a moment to speak about Dr. Stephen McKinnon and to thank him.

Dr. McKinnon was appointed as a Commission Member for a four-year term on June 19, 2019. As a mining geomechanics engineer with over 40 years of national and international experience in industry and academia, he brought valuable expertise to the work of the Canadian Nuclear Safety Commission.

Given the significant demands on his time outside of Commission business, Dr. McKinnon has tendered his resignation as a Commission Member effective December 1, 2021. His contributions were highly valued and he will be missed. Speaking

personally and for my Commission Member colleagues, I thank Dr. McKinnon and extend best wishes for his future endeavours.

Our Safety Moment today is about winter safety indoors and outdoors. Winter weather means we should all be prepared for both indoor and outdoor activities by following these steps.

Follow the three T's when going outdoors: trip planning shared with family or friends, training for outdoor activities and knowing your limit, and, three, taking survival essentials, including communications alerting devices, wear layers to avoid hypothermia, and keep your head, ears and hands covered to prevent frostbite.

And to stay safe indoors, practise fire safety by making sure you have working smoke alarms and don't leave burning candles unattended. Winter is also a good time to check your family emergency kit to make sure you have a flashlight, food, water, an extra blanket and a battery-powered radio.

Winter may be cold, but it doesn't

have to be dangerous. Stay warm and safe and enjoy your winter inside and outside.

I will now turn the floor to Ms. McGee for a few opening remarks.

Kelly, over to you, please.

Mme McGEE : Bonjour, Mesdames et Messieurs.

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

For this Commission meeting, we have simultaneous interpretation. Please keep the pace of your speech relatively slow so that the interpreters are able to keep up.

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

The transcripts should be available on the CNSC website within one to two weeks.

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

of the proceedings.

As a courtesy to others, please mute yourself if you are not presenting or answering a question.

The President will be coordinating the questions during the meeting. During the question period if you wish to provide an answer or add a comment, please use the Raise Hand function.

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

Please refer to the revised agenda that was published on December 9th for the list of items to be presented today and tomorrow.

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 Members for this meeting, CNSC staff and other registered participants will have an opportunity to make verbal comments and Commission Members will have the opportunity to ask questions on

the items before them.

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

President Velshi...?

CMD 21-M57.A

Adoption of Agenda

THE PRESIDENT: Thank you.

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 21-M57.A.

Do we have concurrence?

For the record, the agenda is adopted.

The Minutes of the November 23rd, 24th and 25th Commission Meeting will be presented for approval at a later date.

The first item on the agenda for today is the Status Report on Power Reactors, as outlined in CMD 21-M58.

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

Dr. Viktorov, the floor is yours.

CMD 21-M58

Oral presentation by CNSC staff

DR. VIKTOROV: Thank you.

Good morning, Madam President and Members of the Commission.

My name is Alex Viktorov, I am the Director General of the Directorate of Power Reactor Regulation.

The Status Report on Power Reactors, CMD 21-M58, was finalized on December the 2nd.

The following are updates reflecting changes since then.

For Darlington, OPG Darlington confirmed an additional REGDOC-3.1.1 reportable COVID-19 case. There have been no impacts to minimum

shift complement or safe operation of the facility.

Unit 4 at Darlington has completed the planned outage and again returned to service.

For Point Lepreau, the unit is currently operating at 85.7 percent of full power.

This concludes the status report on power reactors.

CNSC staff are available to take any questions you may have. Thank you.

THE PRESIDENT: Thank you.

I will now open the floor for questions from Commission Members to CNSC staff and licensees.

We will start with Mr. Kahgee, please.

MEMBER KAHGEE: Thank you for your presentation.

I don't have any questions at this time.

THE PRESIDENT: Thank you.

Dr. Lacroix...?

MEMBER LACROIX: Thank you, Madame la Présidente.

Yes, I do have a question concerning the major component replacement going on at Bruce Unit 6. It says that the steam generators are replaced and I was wondering, do the old steam generators remain onsite or are they recycled, dismembered and recycled?

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

The old steam generators are actually -- what we do is we take off the top part, which is the steam drum --

MEMBER LACROIX: Yes.

MR. BURTON: -- which is cleaned and we send that for recycling. The bottom component is then sealed and stored over at OPG's Western Waste Facility.

MEMBER LACROIX: Okay. I see. Thank you very much.

THE PRESIDENT: Thank you.

Dr. Berube...?

MEMBER BERUBE: I have a question for OPG Pickering with regard to the Unit 5 stator water cooling system that caused basically a temporary

outage. Could you give us some details on what actually caused that?

THE PRESIDENT: Mr. Bevacqua...?

MR. BEVACQUA: Thank you for the question.

Val Bevacqua, Director of Operations and Maintenance at Pickering, for the record.

So our preliminary investigation indicates that we had some foreign material that became dislodged from a stator cooling filter that found its way into the stator cooling and caused the flashover within one of the water boxes. That is our preliminary finding at this time. We have performed the repairs and the unit is in progress of being started up with a TCD of December 17th to be synchronized back to the grid.

THE PRESIDENT: Thank you.

Dr. Demeter...?

MEMBER DEMETER: Thank you for the presentation. I have no further questions.

THE PRESIDENT: Thank you.

Ms. Maharaj...?

MEMBER MAHARAJ: Thank you, Madam Velshi.

I'm sorry, I had one quick question with respect to the vibrations at Unit 2 on the Bruce Power Plant.

It is indicated that Unit 2 is derated as a result of vibrations in the turbine steam supply system but that there is no safety concern with this mode of operation. Could somebody from Bruce give just a little bit more detail about what part of that steam system is vibrating and what might be the potential cause?

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

We did discuss this briefly at the last Commission Meeting, just to remind you. What is causing the vibration is we have one of our governor valves on the turbine -- we have four governor valves for the high pressure turbine -- one is in the stuck closed position. It is a safe configuration to operate in, but when we are at higher powers we do get some vibration. It wasn't a problem over the summer,

but as the thermal cycle of the turbine improves with cooler -- with lake temperatures we can actually get better power and that is what has caused the additional vibration.

We do have a fix installed that is actually supposed to be commissioned today and allow us to go back to full power.

MEMBER MAHARAJ: Thank you.

THE PRESIDENT: Thank you.

I have a question for OPG and Bruce Power. You know, we hear about supply chain bottlenecks as a result of the pandemic. What effect has that had on the refurbishment or the major component replacement projects?

Maybe I will start with OPG first and then Bruce Power.

--- Pause

THE PRESIDENT: Do we have anyone from OPG who is going to respond to that?

Ms. McWilliams, please?

MS. McWILLIAMS: This is Leslie McWilliams, for the record. Thank you for the

question.

Before I turn over to Steve Bagshaw, I will start by saying that we do continue to have regular interaction with the supply chain, with our suppliers and vendor partners, so we have not experienced bottlenecks with any supply chain issues. Some of our interactions have transitioned from in-person to virtual in response to COVID-19, but we have not experienced bottlenecks. Thank you.

THE PRESIDENT: Thank you.

Mr. Scongack, please.

MR. SCONGACK: Yes, good morning. Thank you, President Velshi.

James Scongack, for the record.

So to answer your question regarding supply chain interruptions, I would look at it from a site perspective.

So, firstly, on the operation side of the site we don't -- we haven't had any sort of material disruptions related to supply. We have fuel inventory in place for the site, so from an operational perspective we haven't seen any major

disruptions.

From a major component replacement and asset management perspective, over 90 percent of our spend takes place in the Province of Ontario, so a lot of that is domestic and we haven't seen any sort of hold-ups on the project with supply chains.

Having said all of that, we are experiencing some of the same long lead frustrations and delays that everybody is seeing. The fact that we have been very proactive in having parts and materials onsite before we start projects has really helped us.

Frankly, the biggest challenge has been both human resource challenge, the movement of labour, the movement of expertise, and so having to plan that out more fully, especially people travelling internationally to Canada.

And I would also say, obviously it is not the purview of the Commission, but the cost of what I would call very routine materials, whether it's conventional utility lines, things like that onsite, we have some significant price escalation. So I think the major projects are in a good state, but we are not

immune to those and I think continuing to take a long-term view is absolutely critical.

THE PRESIDENT: Thank you. Thanks for sharing those insights. And again, thank you for this update and for participation from industry on this.

We will move to our next item on the agenda, which is the Regulatory Oversight Report for Canadian Nuclear Power Generating Sites for 2020, as outlined in Commission Member Documents CMDs 21-M36, 21-M36.A and 21-M36.B.

The public was invited to comment in writing. The Commission received five written submissions.

Before turning the floor to CNSC staff for its presentation, I would like to acknowledge that representatives from the following departments are joining us to be available for questions: New Brunswick Emergency Measures Organization; Environment and Climate Change Canada; Department of Fisheries and Oceans; and Natural Resources Canada.

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

Dr. Viktorov, over to you.

CMD 21-M36/21-M36.A/21-M36.B

Oral presentation by CNSC staff

DR. VIKTOROV: For the record, Alex Viktorov. I am the Director General of the Directorate of Power Reactor Regulation.

Today I have the pleasure to introduce for information CMD 21-M36, the 2020 edition of the Regulatory Oversight Report for Canadian Nuclear Power Generating Sites.

The Regulatory Oversight Report, referred to as "the report" in subsequent discussions, summarizes outcomes of the regulatory oversight and highlights the safety performance of Canadian nuclear power plants, or NPPs, and the associated waste management facilities, or WMFs.

The report will be presented by staff from the Directorates of Power Reactor Regulation and Nuclear Cycle and Facilities Regulation. They are assisted by staff from other directorates. Licensee

representatives are also participating in the meeting.

Following an introduction to this presentation, we will provide general observations applicable to more than one facility. Then the presentation will continue with details regarding the safety performance of individual NPPs and WMFs. We will then highlight certain aspects of CNSC staff response to the COVID-19 pandemic as related to regulatory oversight of NPPs and WMFs. Additionally, certain aspects of licensees' responses to the COVID-19 pandemic will be discussed. The presentation will then conclude with the overall summary.

We will also summarize some of the topics covered in the supplemental CMD 21-M36.B submitted by staff in part to provide brief responses to the key public interventions.

I will now pass off the presentation to Ms. Kimberly Hazelton to provide an introduction.

MS. HAZELTON: Good morning, President Velshi and Members of the Commission.

For the record, my name is Kimberly Hazelton and I am the Director of the Power Reactor

Licensing and Compliance Integration Division.

To begin, I will note that the report was intended to primarily cover 2020 and has limited information from 2021. This presentation contains some additional information related to 2021 that was not in the report.

This slide represents the scheduled CNSC Regulatory Oversight Reports that are presented to the Commission. This is the third of five Regulatory Oversight Reports presented.

The four operating NPPs in Canada have licences for a total of 21 reactors. Seventeen of these reactors were operating during most of 2020.

There is also an NPP in Québec at Gentilly-2 which consists of a single reactor that is proceeding to decommissioning through preparation for the storage with surveillance phase.

It is important to mention that Darlington Unit 3 was shut down in September 2020 and it is the second unit at Darlington to undergo refurbishment. Unit 2 was the first unit at Darlington to be refurbished and it was returned to

service in June 2020. The Darlington site also hosts the Darlington Waste Management Facility.

Additionally, Units 2 and 3 at Pickering have been defuelled since 2008 and continue to be in the safe storage state. The Pickering site also hosts the Pickering Waste Management Facility.

The Bruce site is home to both Bruce A and B Nuclear Generating Stations and the Western Waste Management Facility. It is important to mention that Bruce B, Unit 6 was shut down in January 2020 and it is the first unit at Bruce site to undergo refurbishment as part of the major component replacement, or MCR outage.

For waste management, the Darlington, Pickering and Western WMFs are licensed separately from the NPPs at their sites.

There are also WMFs at the Point Lepreau and Gentilly-2 sites. These are regulated under the same licence as their neighbouring NPPs.

As an agent of the Government of Canada and as Canada's nuclear regulator, the CNSC understands the importance of consulting and building

relationships with indigenous peoples in Canada and would like to acknowledge the indigenous nations and communities whose traditional and/or treaty territories are in proximity to the sites covered in this report and the organizations that represent them.

Indigenous engagement and consultation with indigenous nations and communities with an interest in NPPs and WMFs continues to be a priority for the CNSC. In 2020 CNSC staff continued to work with indigenous nations and communities to identify opportunities for formalized and regular engagement throughout the lifecycle of these facilities, including meetings and facilitated workshops aiming to discuss and address topics of interest and concern to interested indigenous nations and communities.

The CNSC Compliance Verification Program uses a risk-informed and performance-based approach to verify that each facility maintains compliance with all applicable regulatory requirements in the *Nuclear Safety and Control Act*, its Regulations and the operating licences. In 2020, CNSC staff conducted a variety of inspections and submitted the

results to licensees. These inspections provided the majority of the over 1,300 findings that were used for the purposes of assessing the level of compliance for the 2020 report. The findings were either compliant, negligible or below safety significance.

In addition to assessing compliance, CNSC staff also assess performance through observations and reviews of various licensees' submissions. For 2020, licensees submitted over 90 regular reports on a predetermined frequency and also reported to CNSC staff on 221 events.

The report provides CNSC staff assessment of the overall performance of Canadian NPPs and their associated WMFs for the 2020 calendar year. CNSC staff work to produce the report involves a significant amount of effort to identify and sort both findings and performance information into the appropriate specific areas, which are the constituent parts of the CNSC safety and control areas, or SCAs.

CNSC staff identified which specific areas were relevant to each facility, rated those specific areas and then combined the ratings of the

specific areas to provide a rating of each SCA for each facility. The content of the report itself follows the structure of the specific areas and SCAs, similar to the 2019 report in that the report provided highlights in terms of compliance and performance from selective specific areas in order to describe the most pertinent issues and areas of strength, while providing examples of CNSC staff activities, licensee performance, corrective actions, and improvements.

Finally, CNSC staff have provided an additional reference of supporting information for the report that rarely changes, a document referred to as "General Description of Regulatory Framework for Nuclear Power Generating Sites," which is published on the CNSC website.

I will now pass the presentation to Mr. Bartek Rzentkowski to describe some of the general results in the report.

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

For the record, my name is Bartek Rzentkowski, and I am a Senior Regulatory Program

Officer in the Power Reactor Licensing and Compliance Integration Division.

Typically, the results in this next section are applicable to more than one facility and, in some cases, provide an opportunity to compare results between facilities.

As summarized on this slide, the report presents ratings of safety and control areas or SCAs. These ratings are based on individual assessments of the specific areas that comprise the SCAs. All SCAs were rated as satisfactory for all the NPPs and WMFs.

All events at NPPs and WMFs, reported per the respective requirements, were of low safety significance. The unplanned reactor trips and transients at the NPPs were managed safely. The radiological releases to the environment from the NPPs and WMFs were below the regulatory limits that link allowed releases of specific radionuclides to the dose limit for the public. These results and environmental monitoring in the vicinity of the facilities demonstrated that the public and the environment in

the vicinity of the NPPs and WMFs were protected in 2020. The reported doses to workers at the NPPs and WMFs did not exceed the regulatory limits in 2020.

In the area of conventional health and safety, the frequency and severity of injuries and accidents involving workers were below WANO industry targets. Lost time injuries were rare at NPPs and did not occur at all at the WMFs.

Finally, CNSC staff confirmed that the licensees met the detailed requirements for both nuclear security and safeguards. Based on the IAEA's comprehensive evaluation of safeguards, relevant information, and an evaluation of the consistencies of Canada's declared nuclear program with the results of the Agency's verification activities, the IAEA concluded that all nuclear material in Canada remained in peaceful activities, including the nuclear material at the NPPs and WMFs.

I will now turn the next section of the presentation over to the Regulatory Program directors for each of the facilities covered by the report, who will present highlights of the detailed

CNSC staff assessment for each of those facilities. Note that these highlights are facility-specific and are not meant to be uniform across all facilities.

I will now pass the presentation to Mr. John Burta for a brief presentation on the Darlington Nuclear Generating Station.

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

For the record, my name is John Burta, and I am the Director of the Darlington Regulatory Program Division. In the next few slides, I will present highlights specific to the regulatory oversight of the Darlington Nuclear Generating Station.

In December 2015, the Commission renewed OPG's nuclear power reactor operating licence for Darlington for a period of 10 years. With the current licence, the Commission authorized OPG to undertake the refurbishment of all four Darlington units.

In June 2020, OPG successfully returned Unit 2 to commercial operation after the

completion of refurbishment activities. In September 2020, OPG began preparation activities for the refurbishment of Unit 3, including defueling and dewatering the reactor. Unit 3 is scheduled to return to commercial service in 2023. CNSC staff continue to execute compliance oversight activities covering OPG's progress on the Unit 3 refurbishment.

In 2020, OPG notified CNSC staff of their intent to start the periodic safety review process. OPG submitted the PSR basis document, which CNSC staff accepted in January of 2021. CNSC staff expect work on this project to continue into 2024.

In 2020, CNSC staff continued its regulatory oversight of the completion of integrated implementation plan items. This slide shows OPG's progress in completing the IIP items as well as CNSC staff's progress in reviewing OPG's submissions as of December 31, 2020. The planned IIP items by OPG are shown in dark blue on this chart. In 2020, OPG planned to complete a total of 26 items. The yellow bars show that in 2020, OPG had completed 41 items, compared to the 26 that were planned. Fifteen were

brought forward from future schedule IIP items. The light blue bars show that 19 are still under CNSC staff review, with the grey bars showing that 59 items were closed in 2020 due to carry-over from previous years.

In summary, as of December 31, 2020, OPG has completed 408 items, representing 66 per cent of the IIP. CNSC staff have closed 369 of these items. CNSC staff are satisfied with OPG's progress on IIP items throughout 2020 and will continue to monitor OPG's progress on the remaining IIP items.

In September 2020, Unit 3 entered its refurbishment outage, with OPG progressing through work activities in the lead-in phase -- defueling and draining the reactor -- throughout the remainder of 2020. OPG completed defueling and moderator draining activities at the end of 2020 and progressed to the component-removal phase in early 2021. As of December 6, 2021, OPG has completed the disassembly of the reactor and its major components and is beginning the reassembly phase of the project.

As reported in the regulatory

oversight report, CNSC staff are satisfied with OPG's progress to date with both the refurbishment project and with the implementation of the IIP. CNSC staff continue to dedicate significant resources to the regulatory oversight of the refurbishment project, including ongoing surveillance, compliance assessments, and inspections of refurbishment activities.

From its assessment of OPG's performance in previous regulatory oversight reports, CNSC staff had identified a notable downward trend in OPG's performance in the radiological hazard control area. However, CNSC staff note that OPG has made efforts to improve its performance in this area in 2020, and as such, CNSC staff determined that OPG had implemented measures clearly designed to reverse this trend.

CNSC staff determined that Darlington Nuclear Generating Station's performance in the specific area of chemistry control and maintenance was notable. Darlington's preventative and corrective maintenance backlog continuously improved and, in some

cases, were better than industry averages.

That concludes my presentation on the highlights of the Darlington Nuclear Generating Station, and I will now pass the presentation to Ms. Kimberley Campbell for a brief presentation on the Pickering Nuclear Generating Station.

MS. CAMPBELL: Good morning, President Velshi and Members of the Commission.

For the record, my name is Kim Campbell. I am the Director of the Pickering Regulatory Program Division.

In the next few slides, I will present highlights specific to the regulatory oversight of the Pickering Nuclear Generating Station.

In 2018, the Commission renewed OPG's nuclear power reactor operating licence for Pickering for a period of 10 years. Note that OPG Pickering is required to notify CNSC should OPG intend to operate beyond 2024. Authorization from the Commission is required for such a request. Six of the eight units were operational in 2020, while two units, Units 2 and 3, remained in a safe storage state.

During 2020, the *Licence Condition Handbook* for Pickering operating licence was revised once, in April 2020.

This slide provides a status update on the commitments as of December 31, 2020, for the Pickering integrated implementation plan, also known as IIP. The planned IIP commitments by OPG are shown in dark blue. Overall, there were 98 IIP commitments planned by OPG, and in 2020, OPG planned to complete a total of 20. The progress made by OPG in completing these are shown in yellow. Overall, OPG has completed 91 commitments, which represents 93 per cent of the IIP, as of December 31, 2020.

As seen on this slide, in 2020, OPG completed 17 commitments. CNSC staff review status is also noted, light blue representing "under CNSC review," and grey, "closed by CNSC staff." From the 17 IIP commitments completed by OPG in 2020, 17 were under review by CNSC staff, with 27 commitments being closed in 2020 due to carry-over from previous years.

Now I would like to give an update on progress on 2021. In 2021, there were only seven

commitments remaining. Out of the seven remaining IIP commitments, OPG has completed five of them, with two being removed from the IIP. This removal was approved by the Commission, as detailed in CMD 20-H110.

In summary, as of June 2021, CNSC staff have closed all Pickering IIP commitments and confirm that the IIP is closed.

CNSC staff reviewed OPG's Pickering Nuclear General Station 2020 Impingement Monitoring Report. As documented in the report, the combined biomass of all species and ages impinged in 2020 was 3,525.72 kilograms, which is the lowest amount since 2016. Fisheries and Oceans Canada are in discussions with OPG regarding potential *Fisheries Act* authorization amendments. Fisheries and Oceans Canada are in attendance today to provide further details, if requested by the Commission.

The Commission previously directed OPG to carry out the thermal plume monitoring to confirm findings and reassess uncertainties of risk regarding survival of round whitefish embryos. The slide indicates that the thermal plume monitoring report is

under review. However, CNSC and Environment and Climate Change Canada, known as ECCC, have now each completed their respective reviews of this report and conclude independently that there are likely no adverse effects to the round whitefish embryo survival or on the local or regional round whitefish population from the thermal plume at Pickering. ECCC are in attendance today to provide further details, if requested.

CNSC staff inspections at Pickering in 2020 included an inspection of OPG's operations program. The inspection scope included the evaluation of the operations programs associated with a running unit as well as a unit undergoing a planned outage. This included verifying execution of operational elements such as infrequently performed tests and evolutions, reactivity management, position assured components, and plant status control. This CNSC staff inspection concluded that OPG has adequately defined, developed, implemented and maintained the nuclear operations program at Pickering.

CNSC staff conducted several

maintenance-related inspections in 2020 that confirmed that OPG's maintenance program consistently met the applicable maintenance-related regulatory requirements.

In October 2020, OPG undertook a full-scale emergency exercise at Pickering to test their emergency response capability. OPG had on-site presence during the exercise. CNSC staff participated on-site as well as remotely. During this time, CNSC staff conducted an on-site inspection and noted many compliant findings; however, non-compliant findings related to exercise planning, control, and dosimetry practices were identified. All findings were addressed to CNSC staff satisfaction.

That concludes the highlights for Pickering Nuclear Generating Station.

Next, Mr. Luc Sigouin will present the highlights for the Bruce Nuclear Generating Station.

MR. SIGOUIN: Bonjour Madame Velshi et membres de la Commission. Mon nom et Luc Sigouin and I am the Director of the Bruce Regulatory Program Division.

In the next few slides, I'll present highlights specific to the regulatory oversight of Bruce A and B.

Bruce A, Units 1 to 4, and Bruce B, Units 5, 7, and 8, were all operational during 2020. All reactor units operated per the conditions prescribed in the licence and within the power limits identified in the LCH. The nuclear generating stations at Bruce A and B are governed by a single power reactor operating licence renewed by the Commission 2018 for a period of 10 years.

Major component replacement outage started with Unit 6 in January 2020. CNSC staff monitored MCR progress on a regular basis. Eight MCR Type II inspections and one desktop inspection were performed in 2020. Issues in records management and contractor performance that were identified by CNSC staff at these inspections. The inspections recognized the importance of contractor performance and the challenges associated. Bruce Power put in place a safety performance improvement plan that was focused on improvements of contractor performance at

housekeeping, conventional health and safety, and foreign material exclusion. CNSC staff were satisfied with the implementation of planned corrective actions, and we continue to monitor these areas.

During the reporting period, one revision was made to the Bruce A and B *Licence Condition Handbook* effective May 25, 2020, to add references to new regulatory documents and text update.

This slide shows the progress being made by Bruce Power in completing the IIP for Bruce A and B as well as CNSC staff progress in reviewing Bruce Power's submissions as of December 31, 2020.

There are a total of 191 IIP actions planned by Bruce Power, and six of them were planned for completion in the year 2020. Bruce Power's progress for 2020 is shown in dark blue. The yellow bars show that six actions were completed by Bruce Power in 2020 as planned. The grey bars show eight actions being reviewed and closed by CNSC staff in the same period. Note that two IIP actions from 2019 were closed in 2020.

CNSC staff reviews the completed IIP actions through a combination of desktop reviews and on-site observations. The two actions in light blue are still under review. One of these two actions had a revised schedule accepted by CNSC staff, and the completion date for the other action was extended, due to CNSC staff requests of additional information. CNSC staff confirmed that IIP completion progress in 2020 is satisfactory.

In 2020, CNSC staff reviewed Bruce Power's submission on the updated deterministic fracture protection assessments for Units 5 and 7. The assessments are sufficient to satisfy compliance verification criteria established for pressure tube fracture protection. CNSC staff are satisfied that operating margin remains.

Bruce Power demonstrated progress in the lutetium-177 isotope project at Bruce B. In 2020, CNSC staff have reviewed the Code Applicability Assessment Report, design plan, and Bruce Power's response to CNSC staff comments for the isotope production system. CNSC staff find the Bruce Power's

submissions to be acceptable.

In 2020, CNSC staff were satisfied with the performance of Bruce Power's programs on the reliability of special safety systems. All special safety systems at Bruce A met their unavailability targets in 2020. For Bruce B, all safety systems met their unavailability targets in 2020, except for the negative pressure containment at Unit 5. CNSC staff are satisfied by Bruce Power's corrective actions.

Bruce Power is compliant with the aging management requirements. In 2020, Bruce Power continued addressing CNSC staff concerns related to the measured pressure tube to calandria tube gaps by performing maintenance on the two channels in question to reduce the possibility of PT-CT contact at Bruce B. CNSC staff reviewed the supporting information to qualify the smaller gap measurement tool and were satisfied with Bruce Power's progress.

Bruce Power has adequate contingency plans to maintain or restore critical safety and business functions in the event of disabling circumstances such as a pandemic, severe weather, or

labour actions. Bruce Power demonstrated good preparedness related to the COVID-19 pandemic response, reporting the pandemic status at Bruce A and B on a regular basis. In March 2020, Bruce Power put in place basic measures to prevent the transmission of COVID-19 at site. CNSC staff determined that Bruce Power's preparation and response to the COVID-19 pandemic was adequate.

Bruce Power has a well-developed Indigenous engagement program with the Saugeen Ojibway Nation, the SON, with the Métis Nation of Ontario, MNO, and with the Historic Saugeen Métis, HSM. With the pandemic preventing the ability to meet in person, Bruce Power and CNSC staff continued to work with each community representatives through virtual forums.

CNSC staff confirmed that Bruce Power has adequate programs in place to keep pressure tubes fit for operation. CNSC staff are actively monitoring the fitness for service of fuel channels at Bruce A and B to verify that pressure tubes' fracture toughness will be sufficient for safe operation before the tubes reach the licensing limit of 300,000

effective full-power hours of operation.

This concludes the highlights for Bruce A and B.

I will now turn the presentation over to Ms. Anu Bulkan to summarize results for the Point Lepreau Nuclear Generating Station.

MS. BULKAN: Good morning, President Velshi and Members of the Commission.

For the record, my name is Anu Bulkan, and I am the Director of the Gentilly-II and Point Lepreau Regulatory Program Division.

In the next few slides, I will present highlights specific to the regulatory oversight of the Point Lepreau Nuclear Generating Station.

In 2017, the Commission renewed NB Power's nuclear power reactor operating licence for Point Lepreau for a period of five years.

CNSC staff confirmed that NB Power completed a periodic safety review in accordance with CNSC regulatory document REGDOC-2.3.3 Periodic Safety Reviews. In September 2020, CNSC staff completed the review of NB Power's global assessment report. In

June 2021, CNSC staff accepted NB Power's integrated implementation plan, which will be incorporated into New Brunswick Power's licensing basis should the Commission renew the operating licence next year.

Part I of the public hearing for the renewal of New Brunswick Power's power reactor operating licence is to take place in January of 2022, and Part II, in May 2022, in which the Commission will consider whether to renew NB Power's licence.

In the fall of 2020, Point Lepreau Nuclear Generating Station underwent a planned maintenance outage. CNSC staff confirmed through approximately 20 field inspections that New Brunswick Power effectively planned and executed work during the outage. CNSC staff confirmed that New Brunswick Power met all regulatory undertakings and commitments during the outage. The next planned outage is scheduled to take place in 2022.

New Brunswick Power maintained both the critical, corrective maintenance backlog and the number of critical preventive maintenance deferrals low in 2020 while the deficient maintenance backlog

continued to trend downwards.

CNSC Staff confirmed that New Brunswick Power met the quarterly reporting requirements for the solid radioactive waste management facility and were satisfied with the submissions in 2020.

CNSC Staff confirmed that New Brunswick Power PSA update in 2020 was consistent with section 4.1 of New Brunswick Power’s *Licence Conditions Handbook*.

CNSC Staff concluded that New Brunswick Power’s revised PSA methodologies met the regulatory requirements and found them to be acceptable.

New Brunswick Power submitted other PSA elements in November of 2021, as per the requirements of the *Licence Conditions Handbook*. CNSC Staff's review of these PSA elements will be completed by the end of 2022.

This concludes the section for the Point Lepreau Nuclear Generating Station. I will now pass the presentation to Mr. Eric Fortier for an update on Gentilly-II.

MR. FORTIER: Bonjour, Mme Velshi ainsi, que les membres de la Commission. Pour le verbatim, mon nom est Éric Fortier et je suis Agent du Programme de Réglementation Affecté à Gentilly-2.

Je vais maintenant enchaîner avec la présentation pour les Installations de Gentilly-2.

En 2020, Hydro-Québec a poursuivi les activités de déclassement sans problèmes. Hydro-Québec jusqu'à présent respecte le plan et les échéanciers qui avaient été fournis à la Commission lors de l'octroi de son permis de déclassement d'un réacteur de puissance en 2016.
La campagne de transfert du combustible irradié a été réalisé avec succès.

En décembre 2020, Gentilly-2 a complété le transfert de tout son combustible irradié vers les modules de stockage à sec CANSTOR.

L'état de Stockage à sec sûr; jalon important dans le processus de déclassement devrait être atteint vers la fin de 2021.

En réponse à la pandémie de COVID-19,

Hydro-Québec à déployé son plan d'urgence – risque biologique. Plus précisément, ceci implique que seul les ressources minimales afin d'assurer la réalisation des activités de maintenance réglementaires ainsi que celles reliées aux programmes de surveillance de l'environnement étaient sur place.

Le personnel ayant la capacité d'effectuer du travail de la maison devaient le faire. Des mesures spéciales d'hygiène ont étés implantées. Notamment, l'auto-déclaration quotidienne de santé, le port du masque de procédure dans les bâtiments, la distanciation physique, le lavage de mains et les corridors à sens unique. Finalement, un programme d'aide professionnel est accessible aux employés et aux membres de leur famille.

En octobre 2020, une inspection sur un exercice incendie d'entraide mutuelle entre le Service de Sécurité Industrielle de Bécancour et Hydro-Québec a été mené. Le personnel de la CCSN a conclu qu'Hydro-Québec était conforme aux exigences réglementaires. Bien que la pandémie n'a pas permis au personnel de la CCSN de se déplacer autant que par

les années passées au site de G-2, la surveillance réglementaire à tout de même été assuré par des rencontres bimensuelle entre le personnel de la CCSN et Hydro-Québec, la soumission hebdomadaire des Rapport pour Correctif ou Amélioration (RCA) et la soumission des différents rapports requis par le permis.

Ceci conclut la présentation des faits saillants pour les centrales nucléaires. Je vais maintenant céder la parole à Mme Sarah Watt qui vous présentera les points saillants des sites de gestion des déchets.

MS. WATT: Good morning, President Velshi and Members of the Commission. For the record, my name is Sarah Watt, and I am a Senior Project Officer in the Wastes and Decommissioning Division.

In the next few slides, I will present the 2020 highlights specific to the regulatory oversight of the Darlington, Pickering, and Western Waste Management Facilities, and the Radioactive Waste Operations Site 1.

As noted previously, there are waste

management facilities at the Point Lepreau and Gentilly-2 sites. These are regulated under the same licence as the neighbouring nuclear power plant and have been discussed previously in the presentation.

The Darlington and Pickering waste management facilities are operated by Ontario Power Generation under waste facility operating licences.

The Darlington waste management facility is located at the Darlington site. OPG processes and stores dry storage containers, or DSCs, containing used nuclear fuel, or high-level radioactive waste, generated at the Darlington Nuclear Generating Station. OPG also manages and stores intermediate level radioactive waste generated from the
refurbishment of the Darlington Nuclear Generating Station.

The Pickering waste management facility is located at the Pickering site. Ontario Power Generation processes and stores dry storage containers containing used nuclear fuel generated at the Pickering Nuclear Generating Station. OPG also

manages the intermediate-level radioactive waste generated from the refurbishment of the Pickering Nuclear Generating Station Units 1 to 4.

In July of 2020, CNSC Staff revised the *Licence Condition Handbooks* for the Darlington and Pickering waste management facilities.

The Western waste management facility and the Radioactive Waste Operations Site 1 are located at the Bruce site and are owned and operated by OPG.

At the Western waste management facility, OPG processes and stores dry storage containers containing used nuclear fuel from Bruce A and B and lower and intermediate-level waste generated from Bruce refurbishment activities.

OPG also processes, stores and manages the low and intermediate-level radioactive wastes generated from operations at the Darlington, Pickering and Bruce generating stations. Low and intermediate-level waste operations at the Western waste management facility include a volume reduction building, above ground low level storage buildings,

above ground refurbishment storage buildings, and various in-ground containers, trenches and tiles holes for intermediate-level waste storage.

At the Western waste management facility, low level waste is stored as is, compacted or incinerated. Waste that meets the criteria for incineration is incinerated, then the ashes are stored in containers at the Western waste management facility.

The Radioactive Waste Operations Site 1 is shown in the red box in the right bottom corner of the bottom photo. The site no longer receives waste and is in a state of care and maintenance.

In 2020, through various compliance activities, CNSC Staff confirmed that OPG operated all waste management facilities in accordance with the operating policies, principles and operating safety requirements.

CNSC Staff note that the maximum dose received by a worker in 2020 was well below regulatory limits.

There were no reported lost-time

injuries at any of the waste management facilities in 2020. OPG reported one medically treated injury at the Western waste management facility.

CNSC Staff confirmed that all reported airborne and waterborne radiological releases from the waste management facilities in 2020 were below regulatory limits as well as environmental action levels.

In 2020, CNSC Staff conducted inspections at the Darlington and Western waste management facilities.

As a result of the inspections, CNSC Staff identified non-compliant findings in the safety and control areas of management systems, physical design, radiation protection, conventional health and safety, and emergency management and fire protection. CNSC Staff determined that all non-compliance were of low safety significance.

CNSC Staff have reviewed Ontario Power Generation’s corrective action plans and continue to monitor Ontario Power Generation's progress to address the inspection non-compliances.

Ontario Power Generation reported a total of eight events. CNSC Staff were satisfied with corrective actions to address the events and the corrective measures taken to prevent recurrence.

That concludes the highlights for the waste management facilities. I will now return the presentation to Mr. Bartek Rzentkowski.

MR. RZENTKOWSKI: For the record, my name is Bartek Rzentkowski. In the next section of the presentation, I will summarize aspects of CNSC Staff response to the ongoing pandemic in the context of regulatory oversight of NPPs and WMFs.

In response to the pandemic, CNSC Staff developed procedures to ensure continued regulatory oversight. These procedures, in general, provide direction for the conduct of oversight activities both remotely and on-site.

For NPPs, additional measures were placed on enhancing the number and capabilities of site inspectors to work remotely. CNSC Staff have worked with licensees to provide comprehensive and remote access to licensee information systems.

In May 2020, CNSC Staff resumed on-site oversight activities at the NPPs in a limited capacity. These activities initially focused on general health and safety issues, as well as licensee adherence to their pandemic response plans and COVID-19 health protocols.

For WMFs, on-site inspections still took place during the fiscal year 2020-2021. Inspection procedures and protocols have been revised to incorporate pandemic protocol.

In response to the pandemic, all licensees implemented their Business Continuity Plans.

Licensees initially deferred certain activities in order to minimize the number of personnel on-site. This included security exercises, full-scale emergency exercise and planned outage. However, a major part of the decision to defer was to ensure that licensees complete the critical inspections and collect relevant data.

In addition, licensees took active steps to ensure continuity of operations during the COVID-19 outbreak, for example, using thermal imaging

cameras to check for fever when accessing site.

By maintaining regulatory oversight and gaining access to licensees' information systems, CNSC Staff are confident that licensees' operations remained safe during the pandemic.

This concludes the section on the response to pandemic. I will now return the presentation to Ms. Kimberly Hazelton.

MS. HAZELTON: For the record, my name is Kimberly Hazelton. I will now briefly mention the interventions received on the report during public consultation.

The interventions covered a variety of topics and demonstrated the ongoing interest of numerous stakeholders in the operation and regulation of NPPs and WMFs in Canada.

A few of the key themes identified by CNSC Staff are listed on this slide. Of note, CNSC Staff have undertaken an initiative through the publication of a discussion paper on the regulatory oversight reports to solicit feedback

from all interested parties on the ROR process. The results of this consultation will be discussed at a Commission meeting in January 2022 and will address the scope and content of future reports.

CNSC Staff responses to key themes from interventions have been provided in the supplemental CMD 21-M36.B.

I will now pass the presentation to Dr. Alex Viktorov for final conclusions.

DR. VIKTOROV: Alex Viktorov, for the record.

During the year, CNSC Staff conducted numerous compliance verification activities in accordance with regulatory oversight plans.

Based on the outcomes of a mature comprehensive compliance oversight program, CNSC Staff conclude that the facilities covered in this report operated safely in 2020. This conclusion was borne out by the data collected by staff and assessments of information submitted by licensees. CNSC Staff rated all 14 Safety and Control Areas as satisfactory for

all facilities.

The compliance verification program continues to evolve as CNSC implements improvements in the program itself and as licensees' operational conditions change and the requirements on licensees evolve. Notably, the compliance verification plan was modified in early 2020 in response to the pandemic to ensure continuous effective regulatory oversight of NPPs and WMFs.

This concludes the presentation. CNSC Staff are available to answer any questions that the Commission may have. Thank you.

THE PRESIDENT: Thank you very much for that very informative presentation, CNSC Staff.

I will now ask the representatives of each nuclear power plant licensee if they wish to make comments on the staff's Regulatory Oversight Report for nuclear generating stations for 2020. And we'll follow the same order as in the staff's presentation.

So we'll start with Ontario Power Generation. Ms. McWilliams, if you'd like to make a statement, please?

MS. McWILLIAMS: Good morning, President Velshi and Members of the Commission. For the record, my name is Leslie McWilliams. I'm the Vice-President of Advanced Inspection and Maintenance at Ontario Power Generation.

And with me today are Val Bevacqua, Director of Operations and Maintenance at the Pickering nuclear generating station, Allan Grace, Director of Operations and Maintenance at the Darlington Nuclear Generating Station, Kapil Aggarwal, Director of Eastern Nuclear Sustainability Services Division, and we are also joined by other members of OPG's leadership team.

We value the significant effort by CNSC Staff to produce the 2020 Regulatory Oversight Report. Overall, OPG found the report to be fair and balanced, and we appreciate the CNSC's assessment of our continued strong safety performance and we acknowledge our opportunities for improvement.

OPG also respectfully acknowledges that indigenous peoples are the original stewards of the land and that they continue to maintain this

responsibility to ensure its health and integrity for generations to come. As a company, OPG remains committed to developing positive and mutually beneficial relationships with indigenous peoples and communities throughout Ontario.

And throughout the COVI-19 pandemic, OPG has demonstrated strong operational and safety performance across all our operations. Our fleet has made major strides in achieving our climate goals and building a diverse and inclusive company for all.

OPG's focus on nuclear safety and fitness for service is our top priority, and we have once again been recognized by international peers for exemplary performance and continuous improvements, safety and reliability.

We would like to publicly acknowledge OPG staff and contractors for their dedication in what has been another challenging year. OPG's focus on ensuring a safe work environment has continued, and with COVID-19 vaccines now readily available, we have implemented both a company-wide vaccination standard and an antigen testing program.

OPG continues to implement a variety of COVID-19 safety measures, employee programs and services, including many focused on mental health.

These efforts were recently recognized by the Ontario Shore Centre for Mental Health Sciences with the Pandemic Hero Award in the category of essential service employers.

Our focus on project management and innovation continues, and I am pleased to report that strong progress by our team working on Darlington refurbishment has resulted in Unit 3 advancing to the reassembly phase.

The project team reached an innovative breakthrough when they accomplished the world's first combined removal of pressure and calandria tubes, enhancing both worker safety and project schedule, and we completed another Cobalt-60 harvest at Pickering as part of our decades-long medical isotope program. This harvest will provide one more line of defence against COVID-19 and other illnesses.

And in OPG's Nuclear Sustainability Services Division, we continue to focus on innovative

stewardship solutions with a focus on waste minimization and the safe sorting, transporting, processing and storing of nuclear by-products while protecting employees, the public and our environment.

Also in 2021, the Commission approved OPG's renewal of its 10-year site preparation licence with regard to the Darlington new nuclear project. And just this month, a technology selection was made for a small nuclear reactor designed for that project, the first new nuclear venture in Canada in 40 years.

OPG continues to develop its relations with indigenous communities, the public and our station communities in a variety of manners while ensuring transparency and continued engagement. Staff have launched virtual engagement programs that have allowed us to reach beyond our stations in a number of ways, including through programs, podcasts and virtual meetings.

OPG also launched two new programs targeted to educators, at-home learners and families. The Power on Tuesdays Program provided science, technology, engineering, math and STEM-related

education material for curbside pick-up by families living in our host communities, while our new virtual Power Kids Program allowed students age six to 12 across the province to learn about biodiversity, energy, science, technology, engineering, math, indigenous cultures, arts and climate change.

More than 16,000 students took part in the program sessions for a total of 80,000 registered participants.

And on a personal note, my daughters, ages eight and 11, learned a great deal participating in these programs through their Brownie and Girl Guide groups.

One year ago, OPG launched a climate change plan outlining the goals and initiatives that will help position our company for success in the post-carbon future. The plan was recently recognized with the Canadian Electricity's Association's Sustainable Electricity Continuous Performance Improvement Award for driving efficient economy-wide decarbonization and economic renewal while protecting the environment.

The recent renewal of the Darlington new nuclear project site preparation licence and the building of a small modular reactor at the site within this decade is a key step in this plan. Also as part of this plan, OPG recently unveiled a new subsidiary, Power On, to transition transportation electrification in Ontario.

And our company continues to focus on equity, diversity and inclusion. We have recently launched our equity, diversion and inclusion strategy, and with the appointment of three talented women to OPG's Board of Directors, I am pleased to relay that women now comprise 60 percent of OPG's independent Board members.

And I am honoured to report that we have recently received gold designation from the Canadian Council for Aboriginal Businesses Progressive Aboriginal Relations Program, and in October, we launched a Reconciliation Action Plan, only one of two among Canadian businesses, which will serve as a roadmap to meaningfully advance reconciliation with indigenous communities, businesses and organization

through the establishment of concrete goals in employment and procurement.

In closing, I would like to reiterate our appreciation to CNSC Staff for this fair and balanced report as well as to our staff for their continued dedication to operational excellence. The initiatives underway at OPG exemplify the fact that we continue to grow and learn, both as an organization and as employees, on our journey to excellence.

We appreciate this opportunity to appear before the Commission to discuss the 2020 regulatory oversight report and look forward to answering any questions you may have.

Thank you.

THE PRESIDENT: Thank you, Ms. McWilliams.

We turn it over to Bruce Power, to Mr. Mudrick. And if you can restrict your comments on the regulatory oversight report please, that is what the Commission would like to hear from you.

So over to you please.

MR. MUDRICK: Good morning, President

Velshi and Commissioners. Thank you, my name is Chris Mudrick, I'm the Executive Vice-President of Operations and Chief Nuclear Officer here at Bruce Power.

Other members of the Bruce Power team here today are James Scongack, our Chief Development Officer and Executive Vice-President of Corporate Affairs and Operational Services; Gary Newman, our Chief Engineer; and, Maury Burton, our Chief Regulatory Officer.

I would like to also acknowledge that Bruce Power's site is on traditional lands and treaty territory of the peoples of Saugeen Ojibway Nation, Saugeen First Nation, and the Métis Nation of Ontario.

And Bruce Power is dedicated to honouring Indigenous history and culture, and it's committed to moving forward in the spirit of reconciliation and respect to Indigenous communities we work with.

Our business is built on the four pillars of nuclear safety; reactor safety, industrial safety, radiological safety, and environmental safety,

and James and I will touch on these as part of our remarks today.

I just want to start by talking about our top site priority here at Bruce Power, which is improving equipment reliability through the successful planning and execution of maintenance, outages, projects, and through discipline, rigour, foresight and teamwork.

This will be delivered safely with quality, in doing work right the first time, and through schedule adherence and cost discipline.

Throughout 2020 and 2021 we made enormous strides in the area of reliability by achieving our target reduction in high-priority work, work back-log, by eliminating and mitigating numerous single-point vulnerabilities. And we did this through rigorous commitment to our excellence model with strong emphasis on the use of our accountability model, risk identification tools, Core 4 human performance tools and our fundamentals.

And equipment reliability is essential to reactor safety. It will always be a top priority

for Bruce Power and our excellence model and accountable leadership drive us to set our goals at top quartile of industry performance.

This enables our entire organization to continually strive for the next level of performance by always evaluating their performance against industry excellence while maintaining that correct perspective on our own performance.

We're pleased with our strong industrial safety performance in 2020, and it's been sustained through 2021. And we set high expectations for safety, in particular focus on contracted staff, working on our life extension program. And we're not satisfied unless every worker, including our contracted staff, goes home at the end of the day in the same condition as they arrived.

From a radiological safety perspective, our commitment to innovation and the ALARA concept, as low as reasonably achievable, continue to drive sustained industry leading performance and improvement. And we foster continuous improvement through the development of new innovative

solutions such as remote operating tooling to minimize worker dose.

And we continue to develop means to reduce radiological sourced harm through online outage chemistry control, improvements to our purification systems and development of a chemical decontamination process on lead-in to our refurbishment outages.

We acknowledge and agree with the CNSC report on our performance through 2020, and we're committed to the corrective actions therein, and they're required. So important for us to understand and act on the issues identified in the report.

I do also want to take a minute to talk briefly about our life extension program. Since the beginning, our Unit 6 major component refurbishment in January 2020 we've reached several critical milestones and planning is well underway for Unit 3 MCR, scheduled to begin in 2023.

The reactor removal work in Unit 6 was completed in July 2021, and Bruce Power's MCR team, along with our vendor partners, spent about 10 months removing feeder tubes, pressure tubes, calandria

tubes, and other important internal components. A huge effort went into the removal and replacement of the Unit 6 steam generators.

The inspection and installation series for Unit 6 MCR will continue in 2022, and the unit's return to service is scheduled in 2023.

While there's a lot of visibility with the first major component replacement year, our life extension project has been underway since January 1st of 2016.

This work remains on time, it's on budget, and it's a key element to ensuring that we manage a consistent scope of work over the course of the next 15 years that's predictable, efficient, cost-effective and, most importantly, performed to our standards across the four pillars of nuclear safety that I mentioned.

We continue to work closely with Ontario Power Generation to share lessons learned and apply OPEX through continuous improvement as we progress the planning for the upcoming Unit 3 Major Component Replacement scheduled in 2023.

Before I turn it over to James, I want to take a moment in this public forum just to thank the dedicated employees at Bruce Power for the work they do everyday as nuclear professionals to deliver safe, affordable, reliable power, and life-saving medical isotopes, as well as strengthen our communities and protecting the environment.

It's been a difficult year with COVID and the employees here at Bruce Power have been nothing but professional.

So I'll turn it over to James.

MR. SCONGACK: Great. Thanks, Chris. For the record, James Scongack, from Bruce Power.

There's three items I want to add some additional commentary on related to the ROR, in particular in the area of COVID response, environment and openness and transparency as it relates to our public information program.

In the first area of COVID response, as noted by CNSC Staff in the report, 2020 was an absolutely critical year in terms of responding to the pandemic.

We are proud of the performance of employees and the broader industry in terms of the rollout in 2020 of the largest asymptomatic testing program in Canada that occurred on the Bruce Power site, and really moving into a mass vaccination program into the early part of 2021.

From our perspective, public health measures, whether it’s masking, distancing, sanitization, regular testing and also vaccination is an absolutely critical focus area for our organization when it comes to keeping our employees in the community safe while we’re carrying out the important work that is necessary at Bruce Power to provide safe, reliable electricity, but keeping people safe during the pandemic.

I have to say that it has been a challenging period for everybody. We had to be agile, we had to be engaging. And looking ahead, in particular with what we’re seeing with the Omicron variant, those ingredients to success that made us successful in 2020 will make us successful in the current situation and as we look ahead to 2022.

We do plan to launch later this week a COVID-19 booster program on our site for when eligibility is opened up to people over 18 years of age. So all employees working on the site will have access to vaccines.

And we believe vaccines, in addition to those elements are absolutely critical in keeping people safe, and we want to make those as easily accessible as possible in addition to a full voluntary testing program that we have across the site with rapid testing.

COVID-19 will continue to challenge our site, it will continue to challenge our industry and our province, but we have the right ingredients to keep people safe from COVID-19, but also maintaining focus on those critical areas that Chris talked about, our four pillars of safety starting with reactor safety, radiological safety, industrial safety, and environmental safety.

Moving on to environment. As Chris noted, we continue to meet the standards of the ISO 14001, Environmental Management System. One of the

things I would note related to this, and it is covered in the regulatory oversight report as it relates to the standard, this continues to be an evolving standard that continues to progressively cover a range of new elements.

And to the extent that we're going through the questions and answer session with Commissioners later today, there is no doubt in the ISO standard, but more broadly within Bruce Power, we are finding a greater focus on ESG, a greater focus on a range of factors versus traditional just environmental performance.

And while environmental performance is absolutely critical, in one of our four pillars of safety there continues to be a growing interest in the area of ESG and we are committing to continuing to evolve with that, to lead on that front, and we're open to any Commission questions that may come later in today's hearing on that front.

The third area, which the Commission is well aware of and it's noted in the regulatory oversight report, and Mr. Seguin mentioned in his

presentation, we continue to progress with our commitment to produce Lutetium-177 at the Bruce site, would note the licence amendment related to that.

Our goal is to safely, with quality, deliver the installation of that system during our current Unit 7 planned outage and work through the Commission process that was very well-outlined in our licence amendment to demonstrate through our various management systems, our various programs on site, that we'll be able to successfully implement the execution of that system, starting with Lutetium-177 on Unit 7 with a view to expand to other units.

This is an important partnership between Bruce Power and the Saugeen Ojibway Nation and IsoGen, and will obviously provide global supply of this needed medical isotope. But safety and quality is our top focus, and we will take the time necessary to work through that process that we identified to the Commission before entering the commercial operation of that system.

Just today in the plant crews are installing that system and it is progressing to

schedule.

In conclusion, I do want to end with talking about our public information program in the last minute that I have available to me.

The public information program is a really important component of what we do and through the dialogue here. I'd like to echo Mr. Mudrick's comments around this regulatory oversight report forum, it's a great transparent public open process and many of the outputs from this process we use in the engagement with our stakeholders, communities, Indigenous communities and a range of individuals.

One of the things I would say is Bruce Power has had a long history, whether it's in past hearings, whether it's some specific issues like isotopes or pressure tubes, have always committed to being open and transparent.

And one of the areas we are going to be really focused on in the early part of 2022 is we plan to launch a consultation in early 2022 using independent public opinion polling, stakeholder and NGO engagement, working with municipalities, working

with the public, working with Indigenous communities through our protocol agreement to really have a fresh look at our openness and transparency program and our public information program, understanding the key issues that are important to people, what are the things that people want to hear more from us about, what are the different ways, especially with COVID-19, moving into a virtual world that we can engage with people, and how can we really understand the level of information and context that is needed to address these.

So Bruce Power plans to launch that consultation in early January 2022 and have a completed report by the end of March where we plan to make further enhancements into the ongoing evolution of our public information program. It's something we've always been committed to and we remain committed to it.

So thank you very much, President Velshi. We appreciate the opportunity to present today. And between Mr. Mudrick, myself, Mr. Newman and Mr. Burton and the rest of the team at Bruce

Power, we're happy to take any questions from Members of the Commission.

Thanks again.

THE PRESIDENT: Thank you very much, Mr. Mudrick and Mr. Scongack, for that. And we look forward in our question and answer period to probe a little deeper on some of the things that you have talked about and that you're planning on undertaking in the new year.

Let's move to New Brunswick Power. And, Mr. Power, over to you for any remarks please.

MR. POWER: Good morning, President Velshi, Members of the Panel, CNSC staff, observers, and guests.

Let me begin by introducing myself and others online with me today. My name is Mark Power, I am the Site Vice-President at the Point Lepreau Nuclear Generating Station.

Joining me today, along with many other staff on-site are: Jason Nouwens, Director of Regulatory and External Affairs; Jennifer Lennox, Director of Engineering and Chief Nuclear Engineer;

Krista Ward, Director of Continuous Improvement and Emergency Services; Kathleen Duguay, Manager of Community Affairs and Nuclear Regulatory Protocol; Nick Reicker, Manager of Regulatory Affairs and Emergency Preparedness.

At NB Power we recognize and honour the significance of the Wolastoqey, Mi'kmaq, and Peskotomuhkati Nations' history and culture in New Brunswick.

We are committed building and strengthening positive relationships in the spirit of reconciliation to understand, appreciate, and continuously learn from our First Nations communities.

Meeting regulatory expectations in all safety and control areas is our number one priority. It is often said that the safest plants are also the best performing plants. We also believe this.

Safety is our overriding priority. This includes conventional, nuclear, radiological, and environmental safety. Under the topic of conventional safety, we are very proud of our record and we work hard to maintain a safe work environment at Point

Lepreau. Our conventional safety performance remains very strong.

Under the topic of nuclear and radiological safety, to date the radiological releases over the life of the plant are less than one year's annual dose limit. This is especially noteworthy to us knowing our surroundings are unique, given the distinct ecological features nearby our station.

These achievements would not have been possible without the dedication, hard work, and efforts of the nuclear professionals at Point Lepreau. I want to thank each and every Point Lepreau employee for their efforts in achieving these strong safety and performance results for the people of New Brunswick.

Consistent with the nuclear industry's strong focus on emergency preparedness, NB Power has continued to make improvements to our emergency preparedness and response. Throughout the year we worked together with approximately 40 agency partners, including NBEMO, in preparation for our successful Synergy Challenge exercise which took place this October. The exercise tested the readiness

of station staff, response partners and the province. It was unique in that it included response to a cyber security event as well as a radiological emergency.

I would like to acknowledge that the station conducted a Mutual Aid exercise involving the Saint John Fire Department and Musquash Fire Department this fall. In addition, through the support of NBEMO and the local Warden Service, KI pills were redistributed to all households and business in the surrounding community.

Under the topic of environmental safety, Point Lepreau is registered to the International Standards Organization ISO 14001 Environmental Management Systems, which is a testament to our strength in environmental protection program. In 2020, the station updated our environmental risk assessment which also included an assessment on the thermal discharges
from the station, which has remained consistent with previous studies performed.

We are proud of our environmental performance and NB Power has an extensive

environmental monitoring program that samples the water, the air, and the vegetation in the immediate area to ensure our operations do not adversely impact the community or our neighbours.

In addition, members of the First Nations communities work alongside NB Power on this program to ensure that the delicate balance of nature is carefully maintained.

Over the last two years, despite the challenges of COVID-19, we successfully and safely conducted station activities and outages. We have taken extra measures to our usual safe approach, to protect our workers and our communities during the COVID-19 pandemic.

I am proud to say that there have been no instances of COVID-19 transmission on-site and we have been recognized by Public Health as having the gold standard for COVID-19 protocols within the Province of New Brunswick.

Reliable low-emission electricity contributes to the health and well-being of the people

of New Brunswick and the environment, and they are both of the highest importance to us at NB Power.

In addition to our safety priorities, I would also like to acknowledge that we continue to modernize the station to the latest codes, standards, and regulations. We take note of the items identified for improvement by the CNSC and have put corrective action plans in place to address them.

Through a carefully planned and executed program that involves everyone on our team, we have achieved steady and continuous improvement together. We continue to set higher and more challenging goals for ourselves and have a well-established framework we call "Navigating for Excellence" which outlines our core values and our way of doing business in each of the following areas: safety; leadership; operations; process; equipment reliability; business acumen.

Navigating for Excellence represents the cornerstones of our commitment to being one of the best and safest nuclear power plants in the world.

I would also like to acknowledge the

time and effort that the intervenors took to participate and provide comments on the ROR. Their involvement continues to support our efforts towards meaningful and transparent dialogue with all members of the public. We review and consider each submission and compare the comments to our programs, to endeavor to address each question. This is part of our commitment to seek and understand.

The findings in this report affirm the hard work done by our leadership team and our staff to improve our station. Again, I want to thank each and every Point Lepreau employee for their efforts in achieving strong safety performance results for the people of New Brunswick.

It is also a privilege for us to be a part of the local community. We work hard to drive safety and operational excellence in everything we do, and we are honoured to have their level of engagement and support.

We are committed to communicating and engaging with all communities, stakeholders and people

with an interest in the operation of our nuclear plant.

To conclude, safety is ingrained in our DNA. We are a learning organization, and we are one team that is always striving to be the best that we can. This has resulted in us now having a reduced number of open action items. Our people are empowered to improve the station, and
we are committed to providing New Brunswick with safe, predictable, reliable, and environmentally responsible electricity.

We will continue to focus on improved performance, and we appreciate the work of the CNSC in preparing this report. We look forward to addressing any questions from the commission, and we also look forward to your future review of our efforts.

Thank you.

THE PRESIDENT: Thank you, Mr. Power.

Pour Hydro-Québec, Monsieur Desbiens, avez-vous des commentaires?

M. DESBIENS : Madame la Présidente, Membres de la Commission, bonjour.

Je me nomme Patrice Desbiens, directeur adjoint des installations de Gentilly-2 à Hydro-Québec. Je suis accompagné de ma collègue Annie Désilets, chef Surveillance. Il nous fait plaisir de nous joindre à vous pour cette importante réunion annuelle.

Nous sommes ici aujourd'hui afin de témoigner des domaines de sûreté et de réglementation qui ont été évalués aux installations de Gentilly-2 au cours de l'année 2020 par le personnel de la CCSN.

Nous souhaitons également dire un mot sur l'état d'avancement des activités de déclassement en cours.

Pour l'année 2020, les activités de déclassement de nos installations visaient la préparation au stockage sous surveillance et le transfert du combustible irradié permettant d'atteindre l'état de stockage sûr à sec. Nous avons réalisé les activités suivantes :

- D'abord, nous avons finalisé le drainage des grands volumes d’eau lourde des systèmes.

- À la mi-septembre 2020, nous avons

transféré les dernières grappes de combustible irradié, qui étaient entreposées dans la piscine principale, vers nos enceintes de stockage à sec.

- En décembre, nous avons complété le transfert de 36 grappes et éléments de grappes de combustible défectueux vers ces mêmes enceintes de stockage. Ils ont dû être encapsulés individuellement afin de reconstituer leur première barrière de sûreté. Il s'agissait d'une première dans l'industrie des CANDU et le tout s'est déroulé comme prévu.

- Cette année, en 2021, nous avons poursuivi les travaux visant la mise en retrait des systèmes nucléaires ainsi que nos efforts pour traiter et réduire le volume de nos déchets.

Les dernières étapes à finaliser d'ici 2023, celles qui nous permettront de déclarer l'état de stockage sûr à sec, sont les suivantes :

- le drainage du circuit de refroidissement des boucliers;

- le drainage des piscines après avoir disposé des déchets qui y sont encore entreposés; et

- la reconfiguration des bâtiments et

des salles contenant des matières radioactives résiduelles.

Un mot maintenant sur les doses de rayonnement et sur les données en matière de santé et sécurité au travail.

En 2020, les doses de rayonnement, tant pour les employés que pour la population, sont demeurées faibles et bien en-deçà des limites réglementaires. Bien que Gentilly-2 ne soit plus en opération, nous maintenons toutes les mesures nécessaires pour préserver la santé et la sécurité des personnes, aussi bien que pour protéger l'environnement.

En ce qui concerne la santé et la sécurité des travailleurs, nous sommes, en date d'aujourd'hui, au 1,708e jour sans accident avec blessure entraînant une perte de temps. La santé et la sécurité au travail est au coeur des priorités d'Hydro-Québec, et nous nous faisons un devoir d’en parler et d'agir quotidiennement.

Voilà qui brosse un portrait de l'année 2020 et de ce qui nous attend d'ici à ce que

les installations de Gentilly-2 atteignent la phase de stockage sous surveillance.

Merci à tous de votre attention, et nous demeurons disponibles pour répondre à vos questions.

LA PRÉSIDENTE : Merci, Monsieur Desbiens.

Prior to proceeding with the written submissions filed by the intervenors, I'll open the floor for an initial round of questions from Commission Members.

And we'll start with, Dr. Laroix.

MEMBER LACROIX: Thank you, Madame la Présidente.

Yes, I do have a question concerning the chemistry control at Darlington Nuclear Generating Station Unit 3 [*sic*], which was returned to service after refurbishment in 2020. I read in CMD M-36 on page 81 that the concentration of iron in the feed water system was out of specification for a number of hours, specifically for 630 hours, and I was wondering, what are the adverse effects of this

concentration of iron in the primary heat transport system? Does it affect the mechanical components? Does it affect the -- well, for instance, could the iron become neutron activated and it would have consequences on the radiation protection? So I would like to hear more about it.

THE PRESIDENT: Do we have anyone from OPG?

MR. GRACE: Yes. Good morning, President Velshi, Panel Members. Allan Grace. I am just confirming you can hear me okay?

THE PRESIDENT: Yes, we can.

MEMBER LACROIX: It's good.

MR. GRACE: Okay. Thank you.

For the record, my name is Allan Grace, I am the Director of Operations and Maintenance at Darlington. Thank you for the question.

With respect to the question around chemistry control, just one clarification. I believe it was Unit 2 return to service, not Unit 3. So I think we are --

MEMBER LACROIX: I'm sorry. Yes, you

are right. You are right. I'm sorry.

MR. GRACE: All right. Yes.

Thank you for the question.

So for context we have -- as part of our chemistry control improvement strategy at Darlington, we have recently installed what we call iron filtration skids. These are new improvements to improve chemistry at site and, I will say, to reduce the iron transport following power downs and power ups. So going into an outage, coming out of an outage, it is used to reduce that iron transport.

With respect to your specific question about potential for radiological impact --

MEMBER LACROIX: Yes...?

MR. GRACE: -- you know, one of the possibilities is for iron transport. The boilers are a natural place for impurities to collect and as such the intent of this iron filtration skid is not just to improve overall equipment reliability but to minimize those deposits and ultimately reduce radiological impact.

MEMBER LACROIX: I see.

MR. GRACE: So a twofold effect.

MEMBER LACROIX: Okay. And what about the erosion effect of these iron particles? Well, is there any erosion possible?

MR. GRACE: That is certainly a possibility, but as part of our overall chemistry control that is why we keep a close eye on our iron filtration skid performance and overall chemistry, so as to maximize the long-term longevity of our asset. Overall performance has been very strong at Darlington and consistent with industry excellence.

MEMBER LACROIX: Okay. Thank you very much. That's good.

THE PRESIDENT: So continuing with chemistry and chemistry compliance, I have a question for Bruce Power. In staff's CMD on page 22, Figure 7 provides the Chemistry Compliance Index and for both Bruce A and Bruce B that has kind of been a downward trend and we have said that while there are no safety implications this is due to the moderator isotopic issues.

So Bruce Power, can you just share a

bit more on exactly -- I mean, you know, this has been going on for some time now, four or five years. What are the plans and when do you expect to get closer to 100 percent?

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

I will start and then I will pass over to Mr. Mudrick for some additional context here.

You are correct, this is related to our moderator isotopic. One of the issues that we have here is the online upgrading of this takes a significant amount of time. We do have some impact from the Darlington tritium removal facility being out of service -- or has been out of service at various times and impacted our plans for getting this back to 100 percent.

But I will pass over to Mr. Mudrick for additional detail.

MR. MUDRICK: Yes. Thanks, Maury.

Chris Mudrick, for the record.

So yes, the upgraders in particular we were able to put some investment into those to make

sure that they had better equipment reliability. So we have had much better performance specifically at Bruce B with the upgrader recently.

We have an ongoing -- we talked about equipment reliability. This is one area of course that we need to continue to focus on and make sure that there is no impact to the operation. So we will continue that focus through 2022 to make sure that we have a clear line of sight to improving that chemistry overall.

THE PRESIDENT: So, Mr. Mudrick, maybe a question on when do you expect to get closer to 100 percent? Is this something that takes many, many years to reverse the trend?

MR. MUDRICK: It does. Yes, Madam Velshi, it does. Based on the trend that we see it won't happen in 2022, but I have asked my team to lay out that plan and what it would take to get to 100 percent and I don't have a good answer for you right now.

THE PRESIDENT: Okay. Thank you.

Dr. Demeter, please.

MEMBER DEMETER: Thank you.

I have some broad stroke policy kind of questions. I will start with just one for this round.

So under the Managing Alcohol and Drug Use, REGDOC-2.2.4, Fitness for Duty Volume II, there was a comment that the licensees proposed specifically to implement the requirements, other than random testing, within six months of that date, which was the date of publication of the amendments, and random testing within 12 months of that date. That date was January 22, 2021.

So I want confirmation from staff that they have implemented everything in that REGDOC other than -- because that is more than six months -- random testing. And where are we at with the random testing which will be, you know, within a month and a few days from today based on the CMD?

MR. MUDRICK: Is that a question for staff or for the utilities?

THE PRESIDENT: CNSC staff.

MEMBER DEMETER: Well, I would prefer

to start with staff to see if the power plants are in compliance with what has been put out in the REGDOC, the six-month mark, that everything has been implemented other than random testing and do staff anticipate that all the licensees will be prepared for random testing. And then if they are not, then we will talk to the sites as well.

DR. VIKTOROV: Alex Viktorov, for the record.

Yes, it is our general expectation that licensees will abide by the conditions specified in the *Licence Condition Handbook*.

I will ask Lynda Hunter to provide additional details on where we are at this time.

MS. HUNTER: Yes, hello. Lynda Hunter here, for the record. I am a Human and Organizational Factors Specialist with the CNSC.

Can I just confirm everybody hears me okay? Yes?

THE PRESIDENT: Yes, we can.

MS. HUNTER: Fantastic. Thank you.

So as mentioned correctly, the REGDOC

was published in January 2021 and licensees did commit to implementing the document completely, other than the random testing. So we can -- we did receive submissions from all licensees confirming that indeed they did implement the document by the deadline, which was July 2021, and we have begun some compliance assessments with respect to some of the procedures that they update to us, for example the fitness for duty general procedure, which we try again to review those types of documents.

With respect to random testing, licensees have committed to implement that type of testing by January 2022, so we have received the commitment for that to be done. And at that point we would commence our compliance activities post that timeline. So our plan is to begin our more thorough assessments of compliance against all of the requirements starting in 2022.

MEMBER DEMETER: Okay. Well, thank you for your confirmation that that is going as planned. Thank you.

THE PRESIDENT: And maybe just to add

to Dr. Demeter. As I had read that section I just found it just a bit clumsy in how it was written and you had to figure out what the dates were and what came in when. So maybe staff can just have a look at that section and see if it can just be written a bit more clearly. I think that may be helpful.

Mr. Kahgee, over to you, please.

MEMBER KAHGEE: Thank you, President Velshi, and thank you to CNSC staff and industry this morning for your presentations.

I just want to go back to the thermal plume monitoring. My question is for OPG and CNSC.

In terms of the thermal plume monitoring, did this include a cumulative analysis factoring in the thermal plume over the life of operations, both historic and ongoing? Also, did that factor into -- did climate change factor into your analysis? And following up on that, were indigenous communities, particularly the Williams Treaty First Nations, involved in that study and that analysis?

THE PRESIDENT: We will start with staff.

DR. VIKTOROV: Allow us a minute to find the best suitable specialist to speak on the subject.

--- Pause

DR. VIKTOROV: I will ask someone from our ERA Division to address the question. Ms. Mendoza or anyone?

MS. FABIAN MENDOZA: Hello. Melissa Fabian Mendoza, Director of the Environmental Risk Assessment Division.

If I could, I know that our colleagues from Environment and Climate Change Canada are actually on the line and had a key role in this review. I'm wondering if they might be able to speak to this, the details of this question, if that would be okay?

MEMBER KAHGEE: Thank you.

THE PRESIDENT: Is it Ms. Ali? Who do we have from Environment and Climate Change Canada who can --

MS. ALI: Good morning. It is Nardia Ali, Environment and Climate Change Canada.

So I will just give like a general response and then pass to my colleagues who have reviewed this in more detail.

So Environment and Climate Change Canada has been involved in all the thermal monitoring work that has been done at the OPG sites. So when we review these, we look at the data provided by OPG in their recent thermal monitoring reports. We also incorporate, you know, any kind of modelling information that is applied to this. We review academic research and literature and we incorporate this as well into our review.

As far as the involvement of the indigenous community, that would be CNSC staff that would do that and come to us for expertise.

With that, if you want more detail on how the studies were done, I will pass to my colleague Duck Kim.

MR. KIM: My name is Duck Kim, for the record, Senior Nuclear Coordinator for Environment and Climate Change Canada.

In addition to what Ms. Ali has just

provided, we look at the -- in our assessment for all the sites, OPG and Bruce Power as well as the Point Lepreau sites, our approach is looking at the whole -- the physical effects of the thermal discharge as well as the biological effects. So we look at species of concern, sensitive species such as in the case of the Great Lakes round whitefish has been identified as the most sensitive species that might be potentially impacted, so our assessment has been -- has focused on the round whitefish.

We also look at the spatial extent of the thermal plume, primarily based on measured temperatures, both at the substrate and throughout the water column, and we use thresholds based on literature -- toxicity values found in literature, as well as new research that has been taken or completed by academia through the NRC program for thermal plume effects.

And overall, all sites are -- all the Pickering and Bruce Power, Darlington, as well as the Point Lepreau sites have generally shown -- the results of the analysis have generally shown that the

potential for thermal effects are low. There is ongoing work with Bruce Power and, as I think someone had mentioned, at Pickering as well there was recently completed work there. And furthermore, with Point Lepreau thermal studies were done there as well.

But overall, due to the mitigative measures such as the diffusers that are used or at Pickering, for instance, the fact that the habitat that is impacted is small, by the thermal plume, we are -- the ECCC is generally of the opinion that the effects are low or negligible at all the sites. Thank you.

THE PRESIDENT: Thank you.

So shall we go back to staff and if you can let us know the level of engagement by indigenous communities in this study.

DR. VIKTOROV: Alex Viktorov, for the record.

If I may, I would like to invite OPG to comment. As it is their study to start with, they will be in a better position to explain to what extent the indigenous communities were involved in this

activity.

THE PRESIDENT: Ms. McWilliams, please.

MS. McWILLIAMS: This is Leslie McWilliams for the record. Thank you for this question.

Before I turn over to Kristina Bramma to provide some specific details to the study, I will start by confirming that OPG's relationship with the Williams Treaty First Nations has continued to grow positively throughout this reporting period and to current day. These are valuable relationships to OPG and we do meet monthly with Williams Treaty First Nations to discuss and consult on various topics such as the Darlington new nuclear project and we do discuss environmental subjects, starting with the fish diversion program and annual station environmental reporting.

I will now turn over to Kristina Bramma to provide some specifics related to the study.

MS. BRAMMA: Thank you, Leslie.

First I would like to confirm that

everybody can hear me okay.

THE PRESIDENT: Yes, we can.

MS. BRAMMA: Perfect. Thank you.

For the record, my name is Kristina Bramma, I am Senior Manager Environment Health and Safety at OPG.

To begin with, I would like to say that OPG's environment management program is protective of both human health and the environment. This includes monitoring and mitigation of potential impacts to the aquatic environment.

As a follow-up to licence renewal in 2018, OPG completed a two-year thermal plume monitoring study as additional monitoring to that which was completed from 2010 to 2013. The results of the study conducted in the winter of 2018-2019 and winter of 2019-2020 support the 2018 ERA conclusion that there is no chronic adverse effect from the thermal plume on round whitefish egg survival. These results will be included in the next Pickering ERA update in 2022.

I would like to add that discussions

around this thermal plume study are included in regular update meetings that are held between OPG and indigenous communities, most recently happening in October and November of this year.

THE PRESIDENT: Mr. Kahgee, did you have any follow-up questions or comments?

MEMBER KAHGEE: I think that that is helpful. What I'm hearing is that there are ongoing engagements. I wasn't clear on the terms of the scope of the analysis. What I heard was that it was very limited to a specific scope. I was looking more for whether or not there was any cumulative analysis included in that, looking at both the historic and ongoing operations with respect to the thermal, factoring also things like climate change and how that factors into the analysis. But certainly those are my questions for now.

THE PRESIDENT: Thank you.

Ms. Bramma, did you wish to add anything?

MS. BRAMMA: Kristina Bramma, for the record.

At this time I would say that the focus of the study, the most recent one conducted was on the two winter periods of 2018-2019 and 2019-2020, again, supporting the ERA conclusions of no adverse effects.

THE PRESIDENT: Thank you.

Okay, moving on to Ms. Maharaj then, please.

MEMBER MAHARAJ: Thank you, Madam Velshi.

I am going to pick up Mr. Kahgee's ball because I am also curious about the cumulative impacts, particularly in light of some of the new developments in environmental law where cumulative impacts are becoming more and more relevant. Perhaps I can ask staff to comment on whether or not expanding what appears to be situational impact assessment into a more cumulative framework is something we can expect to hear more about in the future.

DR. VIKTOROV: Alex Viktorov. I will begin and then our specialist can certainly improve on my generic answer.

The climate change impacts certainly are gathering our attention just as Environment and Climate Change Canada was still formulating the specific requirements and activities to monitor impacts of climate change, including cumulative impact that combine integrated effects from various specific impacts. We are experiencing a rapid evolution in the requirements and expectations, so I would say we are still in the learning phase and again open to new developments.

I will ask someone from our environmental group to provide additional details on what is happening or likely to happen in the near future.

MS. FABIAN MENDOZA: It's Melissa -- oh sorry, go ahead, Nardia. My apologies.

MS. ALI: Okay. Nardia Ali, Environment and Climate Change Canada.

So we are now beginning to try to develop guidelines. Our strategic assessment of climate change was released last year and there are guides sort of being developed to support that. The

guides available to date are very high level, but we are hoping that as we get more information and more data from our researchers, these guides can become more specific.

In the meantime, we are asking -- when we provide expertise or advice to CNSC, we do ask our regulatees to consider potential effects of climate change going forward and we try to keep track of changes in lake temperatures and things like that that we could incorporate into our review.

So that is where we are at right now. So ECCC is working on several studies that may provide more guidance on how we address climate change going forward. So it is being looked at, it is not forgotten.

As far as the cumulative effects, work is being done on that at the required levels by different programs within Environment Canada.

And that is all I can provide as an answer at this point. Thank you.

THE PRESIDENT: Thank you, Ms. Ali.

Let me ask Ms. Tadros what she would

like to add, please.

MS. TADROS: Thank you, President Velshi.

For the record, my name is Haidy Tadros. I am the Director General of the Directorate Environmental and Radiation Protection and Assessment.

Thank you for your question, Commissioner Maharaj.

From CNSC staff's perspective, what we have embarked on is a view of our regulatory framework with a climate change lens. So as you probably can imagine, with the small modular reactors as the topics of interest well before they became front and centre with a lot of the work that we are doing now, we took the opportunity and continue to take the opportunity at looking at our regulatory framework with a very specific lens around SMRs. We are doing so and have started with the lens of climate change.

So for example -- and I would ask my colleague maybe Ms. Melissa Mendoza to supplement -- from a flood hazards perspective, we are looking at is there any further guidance that we can

provide in our regulatory framework around how methodologies for bringing together information around flood hazard assessment can be done. That's just one example. But we do take an active role in ensuring that the regulatory framework is up to date with these topics.

And not to say that there is a gap currently; I believe you've heard of many mechanisms that we have where we require licensees to do assessments and analyses periodically and to submit information to us as we look at operating MPPs and other facilities.

THE PRESIDENT: Ms. Mendoza?

MS. FABIAN MENDOZA: Thank you, Haidy.

Yes, Melissa Fabian Mendoza, director of the Environmental Risk Assessment Division, for the record.

So just to complement what Ms. Tadros has said, CNSC staff do examine whether licensees and proponents have considered climate change during technical assessments related to safety analysis, environmental assessment, and environmental risk

assessments. And these assessments take place as part of the licence application, licence renewal, and periodic safety assessment processes.

CNSC staff also take a very conservative approach in assessing climate resilience by assessing bounding or worst-case scenarios. As Ms. Tadros mentioned, we are also working in evaluating whether there is the opportunity to provide additional guidance to the area of flood hazard assessments. So that's something we're working on now in terms of our regulatory framework. So it is work that is ongoing. Thank you.

THE PRESIDENT: Thank you.

Mr. Scongack, over to you.

MR. SCONGACK: Great. Thank you, President Velshi. For the record, James Scongack.

I wasn't sure if this was directed at licensees, but I do want to jump in on this one, because it's an area we're very passionate about.

If I go back to Ms. Maharaj and Mr. Kahgee's questions, you know, I really think there's two elements that may appear in conflict with each

other. But from my perspective, we learned that they co-exist and need to travel together.

From a licensee's perspective, I agree with everything that staff have said, whether it's the ERAs, whether it's the permits, we demonstrate compliance in environmental protection in these areas. And I don't need to recap that.

But to be frank, one of the areas we have heard very clear feedback from Indigenous communities on this particular issue is that when they look at this issue, they don't -- and I don't want to speak for them, but this is the feedback that I have internalized from our perspective and Maury Burton and our team -- is they don't want a series of discussions on individual permits, whether it's the ERA and whether it's the Environment Canada permit, whether it's a provincial permit. They want to look at these elements in aggregate. And there's also a broad capacity issue with how they do that.

And one of the learnings for us coming out of our 2018 licence renewal is we partnered with the Saugeen Ojibway Nation on a program called the

Coastal Waters Monitoring Program. It was a program that was developed by SON that addressed SON's interest and SON's focus areas.

So while we're very confident we have those ERA elements and all the items that we note regularly -- we just had our 10-year permit to take water approved by the Ontario Ministry of Environment, which I can tell you from an Indigenous consultation perspective, whether it was SON or MNO or HSM, was a very I don't want to say smooth process, but a well-engaged process that happened actually earlier than scheduled. The big learning for us is the importance of working with Indigenous communities in the way they want to view the issues and develop those.

And from our perspective, this Coastal Waters Monitoring Program has proven really successful. And again, that's not diminishing in any way, shape, or form from the regulatory submissions that we've made, but it's recognizing we do work with Indigenous communities to address these issues in a way that is important to them and in the areas that

they are focused on.

THE PRESIDENT: Thanks for sharing that, Mr. Scongack.

Let me turn to Dr. Berube next, please.

MEMBER BERUBE: Yes, good morning, everybody. And thank you for your reports and your input to the equation.

As a general note, I'd like to thank everybody for the grit that they've shown through the last year and a half, two years with COVID-19. It's been a battle and a struggle for us all. And what I'm seeing is that everybody is up for it and we're doing well overall. So congratulate yourselves. I certainly am pleased with what I'm hearing and seeing so far.

The question I have is going back now to the actual CMD 36. It's for CNSC staff. And one of the things that was discussed in this particular report was the hydrogen equivalent model of 100 PPM plus and that the intended finish date for that was 2021 December, I believe, which is now.

So could you bring us up to date on where that is in terms of the model itself for development and in terms of validation of that model, please. Thank you.

DR. VIKTOROV: Alex Viktorov, for the record.

We have received an updated model for Heq. And that model was under review during the year. However, as you are aware, there were some additional discoveries that brought a different perspective on hydrogen behaviour and the priorities. That somewhat necessitated readjustment of our priorities and expectations for modelling.

And I'll ask our specialist Blair Carroll to provide all the nitty-gritty details.

THE PRESIDENT: Is Mr. Carroll with us?

MEMBER MAHARAJ: I'm having difficulty hearing, Madam Velshi.

THE PRESIDENT: Hearing me or just hearing anyone?

MEMBER MAHARAJ: Hearing Mr. Carroll.

I can see he's talking --

THE PRESIDENT: Oh, he's not -- oh, he may be on mute, because I can't hear him either. Right.

DR. VIKTOROV: Yeah, we seem to be having difficulty with the connection. He may not have been promoted to the final list.

THE PRESIDENT: Maybe we can come back to Mr. Carroll after.

Before we take a break, maybe I can ask staff a question. The licensees, when they gave their comments or remarks, many of them spoke about their priorities going forward. And staff, in your presentation, you didn't really give us a sense of what are your areas of focus looking ahead. Can you maybe share the top three or four? And Dr. Viktorov, you just talked about pressure tubes and modelling now, but what are the key areas of focus when it comes to MPPs looking ahead from the staff's perspective?

DR. VIKTOROV: So Alex Viktorov, for the record.

We try to plan and conduct our

oversight activities in such a way that all 14 safety and control areas are addressed, covered, and we have assurance that licensees perform safely in all of them. Of course, we do assign our resources, allocate resources in correlation with priorities.

And for operating facilities, I would say one of the key priorities is making sure that aging of the facilities is managed, controlled, understood, and we have assurance in safe long-term operation. And pressure tubes are only one element of this component. We also monitor health and reliability of all safety systems, processes. And it touches on chemistry. Chemistry is not something that would -- a deviation in chemistry parameters would not result in an immediate event or accident, but in the longer term it may have a profound effect on reliability of systems and performance of major components. I would say aging programs is one of the priorities.

From the CNSC perspective, a number of projects are also a priority. We can list the refurbishment activities. We do understand that this

involves additional or requests additional focus, additional challenges with the contractors on site. And the necessity of conduct refurbishment as well as operation of other units at the same time. So we do allocate significant resources to monitor refurbishment as well as projects such as isotope productions and so on.

And, well, time-sensitive or time-specific activity is monitoring the impact of COVID pandemic, including any effects on the shift complements, the supply chain, and importantly on the human factors and safety culture, which may not again be noticeable right away, but in the longer term may have a significant impact on the reliability and safety of operation. I would say, well, if you want to have three priorities, that's something that has been definitely high on our priority list in the past year, this year, and very likely going forward.

THE PRESIDENT: Thank you very much. That's very helpful.

Let's try getting back to Mr. Carroll and see if he's now able to speak to us. Mr. Carroll?

Okay, not working.

So why don't we take a break and we'll come back at 11 -- let's make it 11:30. And hopefully we can address Dr. Carroll's technical issues during the break. So we shall see you at 11:30 a.m. Thank you.

--- Upon recessing at 11:11 a.m. /
Suspension à 11 h 11
--- Upon resuming at 11:30 a.m. /
Reprise à 11 h 30

THE PRESIDENT: Welcome back.

And hopefully, Mr. Carroll, your technical issues have been resolved. So let's turn it over to you for you to respond to Dr. Berube's question around what's the latest around pressure tubes and modelling for fracture toughness. Is Mr. Carroll back?

MR. CARROLL: Are you able to hear me now?

THE PRESIDENT: Yes, we can.

MR. CARROLL: My apologies. My computer did not seem to want to recognize my microphone.

So Blair Carroll, for the record. I'm a specialist with the Operational Engineering Assessment Division.

So to respond to Dr. Berube's question, CNSC staff has received the updated fracture toughness model. We started -- we began the review early in June; however, with the findings that took place with the Bruce Power pressure tubes in July, our review has fallen behind a little bit because of having to deal with the other issues.

So we're in the process now of finalizing that review. We will be issuing some questions to industry shortly just to get some clarification on the elements of the model, and hopefully within the next few months we will have made a decision whether or not regulatory acceptance of the model will be granted and the path forward to dealing with resolving any issues that are in place.

MEMBER BERUBE: The second part of

that question was how do you validate this model. I mean, you get the model in, you take a look at it, and now you're in the process of checking it out to see that basically it seems to be legit, and then you've got a lot of questions to follow up, and then you still need to validate the model. What criteria do you use to do that?

MR. CARROLL: Blair Carroll, for the record.

So industry has developed the model using available data, and they have kept some of the data from some of the burst tests that have been carried out on pressure tube material in reserve, using those test results to compare to the model that was developed using a different set. And staff is also looking at previous test results and as received pressure tube burst tests and those sorts of tests, just to confirm that the model predictions remain valid. And industry is continuing with new burst test results. So as new data is collected from the new test results, each of those test results are compared against the model to confirm ongoing validation of the

model.

THE PRESIDENT: Thank you, Mr. Carroll. I'm sure the Commission will be engaged in the new model and its approval and where we go forward with the longer-term missions around pressure tubes and fracture toughness. But thanks for the update.

We'll now proceed with the five written submissions that have been filed by intervenors. And Ms. McGee, I'll turn it over to you to lead us through the questioning on those, please.

CMD 21-M36.1

Written submission from the

Grand Conseil de la Nation Waban-Aki

Mme McGEE : Le premier mémoire est du Grand Conseil de la Nation Waban-Aki, tel qu'indiqué au document 21-M36.1. Ce mémoire a été déposé en français.

Est-ce qu'il y a des questions sur ce mémoire? Are there any questions on this submission?

Dr. Demeter?

MEMBER DEMETER: D'accord. Je n'ai pas de questions. Merci.

MS. McGEE: Thank you. I see Ms. Thiele has her hand up, President Velshi. Oh, not anymore.

Do any of the other Commission Members have questions on this intervention? Est-ce qu'il y a des autres questions?

I don't see any hands up.

CMD 21-M36.2

Written submission from the Canadian Environmental Law Association

MS. McGEE: So we will proceed to the next written intervention, the submission from the Canadian Environmental Law Association, as outlined in CMD 21-M36.2.

Are there any questions from Commission Members on this submission?

Mr. Kahgee?

MEMBER KAHGEE: I just have one question. Thank you, Ms. McGee.

This question is for CNSC staff. Aside from CMD-36.B, which I thought was very helpful, in terms of process, how are recommendations from interventions integrated into your analysis or review? And how is that communicated to the intervenors?

DR. VIKTOROV: Alex Viktorov.

Allow me to begin again. The whole regulatory oversight report process is being reviewed to see if it meets its desired goals and whether we can conduct it more efficiently.

So we have developed a discussion paper on the ROR process, including input from how various intervenors, interested parties, stakeholders and so on and the Commission will be updated on this process in the months to come. Again, we tried to capture common themes in the interest of intervenors, so stakeholders.

But I'll see if any of my colleagues will want to provide specific insight how recommendations are captured, retained, and processed.

Not sure if anyone will want to step in and give additional detail.

Well, doesn't look like it, not at the moment. But again, let me assure you that we do carefully consider all feedback. And some of the comments are certainly challenging and we try to provide the up-to-date response, considering the oversight process and the prime objective of the oversight reports, which is to document the regulatory results from activities in the given year.

But many comments from intervenors go beyond the stated objective, and unfortunately the current objectives of the ROR may not be suited for stakeholder expectations. We're trying to find a balanced way how to satisfy interest from stakeholders and what we can actually provide.

MS. CATTRYSSE: And can I please add?

My name is Clare Cattrysse. I'm the director of the Indigenous Stakeholder Relations Division at the Canadian Nuclear Safety Commission.

What I would add is that when we have interventions -- this one is from CELA -- definitely

with Indigenous groups, we track all the issues and recommendations that come out of all interventions, notably what has come out on a ROR. We do meet regularly with the group, so we will be following up on those questions and recommendations and working with the groups to find solutions and possible fora to address their issues or to accommodate them in how we write the material in our CMDs in the future.

With respect to CELA, we are working with the Secretariat to keep track of the recommendations and again finding the correct forum to address the issues.

MEMBER BERUBE: And this is done in communication -- has there been communication with the intervenor on that in particular --

MS. CATTRYSSE: Yes. So Clare Cattrysse, for the record.

Yes. Well, with Indigenous groups, most definitely, we have explained what -- we always follow up on actions that come out of the RORs as well as on actions and recommendations that are brought forth. We always bring those forth through the

communities.

With respect to, for example, with CELA, we talk to CELA on a regular basis as well to -- we have an INGO forum. But we also, as I said, we will be working with the Registrar to just make sure we've got all the recommendations and determine which part of the organization would be the right people to reach out to them to follow up.

I don't know if that answers your question. Thank you.

MEMBER BERUBE: That's helpful, thank you.

MS. McGEE: Ms. Maharaj?

MEMBER MAHARAJ: Thank you, Ms. McGee.

I have a question, and I expect this is probably for staff, with respect to the asbestos phase-out comments contained in CELA's intervention. It seems as though there is a fairly superficial amount of attention being placed on asbestos phase-out, or perhaps it's just not included in the depth that I might have expected in the ROR.

Can staff give us a perspective on

what steps are being taken to deal with asbestos phase-out and, you know, in particular, the specific measures that CELA has recommended?

DR. VIKTOROV: Lee Casterton will provide the CNSC staff perspective, but licensees will also have some information to share what is being done on their side.

MR. CASTERTON: Good morning, Members of the Commission. Just to check, can everyone hear me? Yeah, okay.

So good morning. My name is Lee Casterton. I'm a Senior Regulatory Program Officer with the Pickering Regulatory Program Division.

So just to provide some clarity, the *Prohibition of Asbestos and Products Containing Asbestos Regulations* does not require a complete phase-out of all products containing asbestos, but what it does is require that nuclear facilities determine whether there are technically or economically feasible alternatives for those asbestos-containing products that are required for the facility.

Through Environment and Climate Change Canada and Health Canada's development of the Regulations, licensees of Canada's nuclear power plants were consulted to ensure that there was no impact to safety. The CNSC has helped facilitate this consultation, and the final version of the Regulations that was published in December of 2018 included a four-year exemption for nuclear facilities in order to ensure licensees had enough time to identify all products containing asbestos and determine whether a technically or economically feasible asbestos-free alternative existed.

So during this four-year exemption, NPP licensees have to report annually to Environment and Climate Change Canada on the use of the asbestos-containing products and submit the appropriate asbestos measurement plans. So these are submitted to Environment Canada, and CNSC staff do receive copies of all of these documents. And that's what you see on page 64 and 65 of the ROR itself.

Following the four-year exemption, NPP licensees will be required to obtain a permit from

Environment and Climate Change Canada for the use of asbestos and asbestos-containing products. So the permitting process requires licensees to demonstrate that there are no technically or economically feasible alternatives. Environment and Climate Change Canada is responsible to review these licensee submissions and determine whether to grant a permit.

Through the CNSC and Environment and Climate Change Canada's memorandum of understanding, the CNSC will support any review upon request.

It is the responsibility of each licensee to remain in compliance with these Regulations both during and following the four-year exemption. And the licensees present today may be able to provide you with a bit more information on some of the steps that they're taking during this four-year exemption process in order to identify those components and look at technically and economically feasible alternatives.

MEMBER MAHARAJ: Okay.

MS. McGEE: Thank you.

Dr. Lacroix?

MEMBER LACROIX: Thank you. It appears, according to the report of the Integrated Regulatory Review Service mission to Canada in 2019 that there are some inconsistencies with the derived release limits used by the CNSC. And I'm wondering what are these inconsistencies?

DR. VIKTOROV: I'll have our specialist available to respond to this question. Kiza Sauvé will address this request. Kiza?

MS. SAUVÉ: Yeah, Kiza Sauvé. I'm the director of Health Science and Environmental Compliance Division.

So the inconsistency, if I can lay it out, and I may ask one of my colleagues to step in if I don't get the inconsistency right, but I can tell you how we're addressing it.

So the derived release limit, as it stands right now, is to look at how much radionuclide would you need to release in order for a member of the public or the most exposed individual to get one millisievert.

Internationally, one millisievert

isn't recognized as best practice. So while one millisievert is still the public dose limit --

MEMBER LACROIX: Right.

MS. SAUVÉ: -- and that's not planning to be changed, licensees can do better. So there can be a dose constraint, or we can look at lowering that, what that release level would be.

So we've been working on that approach in the new REGDOC-2.9.2 and you should be -- I know I've been saying this many times -- but you should be seeing that in 2022 in front of you.

MEMBER LACROIX: Okay, that's great. Thank you.

MS. McGEE: Dr. Demeter?

MEMBER DEMETER: Thank you. I had -- and Ms. Tadros has partially answered my question about implications of climate change and when they have a specialist that talked a bit about it.

I want to get a sense from staff of how nimble you are at adopting changes to safety analysis, whether within design or beyond design, relative to ongoing relatively in geological

timescales rapid changes to our climate, and whether or not it would be useful to actually have a climate change part of the report that specifically deals with these are the changes that have been made relative to changing climate -- climate changes planned parameters. So how nimble are you? Is this every five years -- and which wouldn't be nimble enough -- but how do you nimbly accommodate significant changes in climate to your safety analysis?

DR. VIKTOROV: Alex Viktorov. Let me begin, and a specialist in all things climatological will help me, I'm sure.

I think we are relatively nimble. And it also will depend on what we see. Right now, I don't believe there is an urgent need to modify, change, or introduce any new requirements. Climate change is happening, no doubt, but not that has to require urgent updates.

The path we've taken is to start with research and collect the data, assess the impact on nuclear facilities, including nuclear plants. And the

impacts may be extreme -- such as extreme weather scenarios, flooding, droughts -- or they may be cumulative -- again, small changes accumulate or have aggregate effects such as, well, increasing temperatures leading to earlier biological activity accumulation of algaes or some forms of life on systems.

So we certainly keep an eye on what's happening and trying to also benchmark how activities through our engagement with our international peers. We don't believe there is a need to urgently change any of the requirements.

Nevertheless, we have ongoing processes. Our requirements are not static. All regulatory documents are open for revision on certain frequencies. And talking about safety analysis reports, they have been updated also on a five-year frequency as required, demonstrated by our research results.

So is this -- I'll ask my colleagues to provide additional detail. Dr. Lei, go ahead.

DR. LEI: Good morning, my name

is -- can you hear me or see me?

DR. VIKTOROV: Yes.

DR. LEI: My name is Dr. Lei. I'm a hydrologist with the Environment and Risk Assessment Division.

Climate change has -- well, it's a gradual process, although it's accelerating. Now, understanding of the temperature change is more mature from a scientific standpoint, so the education is more complex, but people around the world are still continue to study it.

CNSC Staff have been following and actively participating in national, international study groups and collaborate with others, and every significant, let's say, flood event would add a dot to the statistics. But again, one dot is not statistical. The trend is about some kind of average over years, and our understanding is increasing all the time.

From CNSC perspective, I think we are kind of fortunate because the nuclear safety in terms of climate change, in terms of extreme weather

conditions, we don't rely on the exact results for accurate prediction of the changes because we take a more conservative approach. We look at sort of the upper bounding, the physical limits, the extreme cases, so that leaves a huge safety margin that would be able to accommodate or to deal with, for example, the climate change. And we consider climate change is just one of the uncertainties of that so we deal when we look at the safety analysis.

So for example, flood -- external flooding is the most important external hazard which has ever caused any or near accident at nuclear power plants. We use the probable maximum precipitation or probable maximum flood, which stands for the physical extreme. No matter how the temperature increases or floods manage to increase, they cannot go beyond the physical limit, and so with the climate change, we are putting more studies and thoughts on the refinement of those physical extreme, physical like upper bounding flood, like probable maximum flood.

CNSC recently -- and under this limit, the reason we call it probable maximum is because even

though there is a limit, like the air has the capacity to hold certain amount of water and it has a certain conversion efficiency to convert the moisture in the air into precipitation, so there is a physical limit. However, our understanding is continuing to evolve so we are getting closer and closer to a better understanding or estimate of what the physical extremes or the climate change acceleration has led us to be more -- put more efforts on these kinds of studies.

So CNSC Staff will --

MEMBER DEMETER: Thank you very much. That's good. Thank you.

MS. McGEE: Thank you very much.

I notice that Ramzi Jammal has his hand up.

Mr. Jammal, you'd like to add something to this item?

Mr. Jammal, are you there?

Perhaps we could come back to Mr. Jammal, President Velshi.

THE PRESIDENT: Thank you.

I have a couple of questions from this intervention, and it's unfortunate that the Ontario Fire Marshal's Office isn't here.

But maybe staff can comment around the availability of the Pickering Nuclear Emergency Response Plan and -- sorry, the Provincial Nuclear Emergency Response Plan Technical Study.

Do you know if one asks for a copy of it, what's the turnaround time?

DR. VIKTOROV: Alex Viktorov.

This intervenor asked for several reports to be shared and, again, if it were CNSC documents we would have shared immediately. Unfortunately, we are dealing with documents, reports produced by an outside organization. It would be simply inappropriate for us to share documents without consent of the owner.

THE PRESIDENT: Right. But Dr. Viktorov, that wasn't my question.

My question was, how easy is it to get this document if one requests it of the Fire Marshal's Office?

DR. VIKTOROV: Yeah. Again, no, I don't specifically know. I'll ask our Emergency Preparedness Program group to provide response.

I believe it's coming inevitably and so will be available for all public to provide their inputs to the process, but yes, as you just said, it's unfortunate we don't have representative of the Office of Fire Marshal with us. But it will be available in the, well, next few months.

Perhaps Mr. Jammal will shed additional light to this.

THE PRESIDENT: I don't know.

Mr. Jammal, do you have something to add to this particular question of mine?

I want to know, has anyone from the CNSC requested a copy of this report or gone to find out how long it takes to get a copy of the report if one is asked for -- asks a copy of it?

DR. VIKTOROV: Yeah, we have our specialist from EMPD, Ms. Elaine Kanasewich. Please, could you give us the latest?

MS. KANASEWICH: Good afternoon, or

good morning. Elaine Kanasewich, Acting Director for the Emergency Management and Programs Division, for the record.

Thank you very much for the question.

Indeed, members of the public are able to get a copy of the technical study through the OFMEM website, so that's Ask OFMEM.

And the turnaround time is relatively quick. It's, my understanding is, a couple of hours if not 24 hours.

In addition, the OFMEM has given permission to the CNSC, who did receive a copy of the technical study, to share with anybody who requests it.

And I understand that we have already done so via our secretariat, so a copy is available to be shared through the CNSC if we are requested by anyone.

So there's two avenues at this point that the public is able to receive a copy of this technical study, and that is, number one, through the OFMEM website, and number two, upon request at

the -- of the CNSC.

Thank you.

THE PRESIDENT: Thank you. That is very reassuring to hear.

My second question on this intervention, and I'll direct this to OPG, is around plans for the shutdown of Pickering. And there is mention made of some work done with Durham Region, but again, I think the Commission would find it very helpful if you were to give us your latest thinking around plans for Pickering, please.

Ms. Irvine.

MS. IRVINE: Sara Irvine, Manager of Regulatory Affairs, Pickering Nuclear.

So to answer your question, Pickering has recently undertaken review of our periodic safety review outcomes, and we are currently looking at what it would take to operate Pickering through 2024 and a bit beyond.

We're well aware with regulatory requirements, including getting Commission authorization should we seek to pursue that or explore

that opportunity. Obviously, we have the provincial government's endorsement, and we are currently undergoing work right now to evaluate our options.

Thank you.

MS. McGEE: Ms. Maharaj, you had your hand up?

MEMBER MAHARAJ: Thank you, Ms. McGee.

I just had one small question. In this particular intervention, the intervenor has asked for there to be information about small modular reactors and future plans.

I appreciate that this is at a fairly preliminary stage at this point and there's steps to be taken, but I'm wondering if staff can answer whether we might see a bit more detail about this particular development in next year's ROR, or are we looking at multiple years out?

DR. VIKTOROV: Alex Viktorov, for the record.

We certainly strive to keep the Commission informed of developments in the SMR domain. However, currently we don't really have any licence

application note to speak about operating facilities, so they don't really fall nicely within the scope of NPP ROR, so we would be probably looking for the best ways to keep the Commission informed through this or alternative means.

Again, it's a very active field and we expect that there will be licensing applications, but certainly there have been none in 2020. There was really nothing for us to report in this particular document.

MEMBER MAHARAJ: Okay. Thank you.

MS. McGEE: President Velshi, I know our technical staff were trying to correct Mr. Jammal's issues. I haven't had confirmation, but I note he did still have his hand up.

MR. JAMMAL: Sorry about that, Madam McGee, for the confusion here.

Madam Velshi, can I answer all the questions, if I may?

With respect to report, I compliment Elaine's answer, definitely. Once CELA reached out to me with respect to copy of the report, we made it

available from the CNSC perspective.

So as it was mentioned, it's upon request.

With respect to Dr. Demeter, we spoke about statistics and the future, but we are nimble. The CNSC always takes events regardless if it's nuclear event or non-nuclear event. I can give many examples like the Mount Poley event itself with respect to any environmental element, and we make -- take regulatory action based on our philosophy is performance based. We take all this into account, national and international events.

And with respect to the SMR, Mr. Maharaj, as Dr. Viktorov mentioned, we will be providing focused update with respect to the SMRs.

We provided updates to the Commission with respect to our readiness on previous occasions and informed in the public hearings and the inclusion of the updates in an -- in the ROR will be dependent on the licence application that's going to come to the Commission, so thank you.

And sorry for the technical

difficulties. Thanks for the IT to bail me out. Thank you.

CMD 21-M36.3

Written submission from Gordon W. Dalzell

MS. McGEE: Thank you.

I don't see any other hands up, so the next submission is from Mr. Gordon Dalzell, as outlined in CMD 21-M36.3.

Are there any questions from the Commission Members on this submission?

Ms. Maharaj.

MEMBER MAHARAJ: Yes. I do have a question, and it may be of a bit more general nature, but in this intervention it's raised with respect to how CNSC adapts its oversight to account for aging infrastructure.

And when I look at the fleet, you know, there are aspects of infrastructure aging that I think sort of jump out at us, so perhaps staff could give us an overview of how they account for

infrastructure aging in their inspections and analysis of the safety and control areas?

DR. VIKTOROV: Alex Viktorov.

Well, as I mentioned in my priorities, aging is really very important activity for us and, while it's a relatively nimble area, we have updated our requirements for aging maintenance which (indiscernible) recently. We are benchmarking our expectations or requirements against our international peers.

There are significant international activities in -- on this and in keeping track, sharing experience, you know, things related to aging. That relates to both physical aging, equipment just wears out and becomes less performing, and obsolescence when the physical state may be still fine, but there are better technologies available.

Again, we do update our requirements and we believe they are top-notch among our peers. We do spend pretty significant regulatory effort on always seeing licensees' performance in aging.

Perhaps this SCA really is consuming

the most significant regulatory time in always seeing we conduct inspections at the facility frequently. We do oversight of programmatic provisions. We get -- annually get performance indicators from each power plant, so we keep a close eye on how licensees are coping with aging at their facilities.

But certainly our specialist in Directorate of Assessment and Analysis will be able to speak about various specifics pertaining to this area, so I'll invite our colleague to provide details.

Do we have anyone from operational engineering assessment or that group?

Mr. Stoyanov.

MR. STOYANOV: Can you hear me?

My name is George Stoyanov. I'm a technical specialist with Engineering Design Assessment Division, and I would like to provide some perspective to how we consider aging.

So since we introduced a few years ago a new REGDOC on aging management, we also introduced a Type 2 inspection on aging management. We also perform desktop reviews in order to ensure that all

the degradation mechanisms -- all the possible degradation mechanisms are accounted for by our licensees.

Also, in the seismic area, in the seismic design area, there is connection. We connect aging to the other processes, and I can give you an example.

The seismic design codes where we made it a requirement that for any seismic qualification of structure systems and components at nuclear power plants, the current state of those equipments and components needs to consider their aging and their current state.

With this, I hope it answers your question, but if there are other more clarifications required, they can be provided.

Thank you.

MEMBER MAHARAJ: I think that answers my question for the moment, Madam Velshi. Thank you.

THE PRESIDENT: Ms. McGee, you're on mute.

MS. McGEE: Thank you very much.

Mr. Scongack, you had your hand up, but I see now that it's down. Do you have something you wanted to add to this discussion?

MR. SCONGACK: I believe Commissioner Maharaj mentioned her question was answered, but I can't help myself on this one, so if you don't mind, from a licensee's perspective, I just want to add that I think an important factor -- because I think it's a really good question.

Given the fact that we focus so much attention on the date of the major component replacements, sometimes it leaves the public and a number of individuals with the perspective that we're not investing in the plant till we get to the major component replacement. And keep in mind, at the Bruce site, the major component replacement is primarily focused on pressure tubes, calandria tubes, feeders and steam generators.

So if you look at all of the activity that Mr. Mudrick noted earlier on in the day, only about 40 percent of the capital that we would invest in the plant is based on major component replacement.

We have an over-life asset life management program that is actually doing as much work in the advance period to MCR as in the MCR. And so the combination of renewing all of that infrastructure is part of an overall 20-year integrated plan and that work does not wait for major component replacement to take effect.

We also have an industry standard renewal program of funds allocated per unit per year of operation which we call sustaining capital, and that sustaining capital is always to maintain that high level of standard and plant condition.

So you know, sometimes you read in the newspaper people say aging reactors. If you went through the Bruce site today, you would say new boiler feed pumps, you'd see new valves, new conventional site equipment. You'd see a lot of renewal.

And so I think that's a really good question, Commission Maharaj, because sometimes we lave people with the impression that this equipment doesn't get replaced or modernized until the major component replacement, and the major component replacement is one component and what you're doing is

you're sequencing those major component replacements to do them in a sequential, executable order. But the rest of the plant is getting renewed and has been under -- going through that for about 15 years.

MEMBER MAHARAJ: So maybe, Mr. Scongack, if I can just follow up, then.

When you're doing your major component replacement or your other associated programs, are you looking as well at balance of plant and civil works because --

MR. SCONGACK: Absolutely, yes.

MEMBER MAHARAJ: -- in those that you mention, there's a comment about concrete. There's concern raised about foundation and concrete specifically.

MR. SCONGACK: Yeah. James Scongack, for the record.

So if you go through every single one of those nuclear safety and control areas that is mentioned in the Regulatory Oversight Report, we have aging and life management, asset management, sustaining investments in all of those areas.

Everything from buried piping to water treatment facilities, balance of plant, turbines. All of those particular components are all part of that plan.

And there -- as I said, there's actually more physical investment going into those particular areas than there is actually in the major component replacement when you aggregate it all.

MEMBER MAHARAJ: Okay. That makes sense to me. Thank you.

MS. McGEE: Thank you.

Dr. Lacroix, you have a question?

MEMBER LACROIX: Yes. This is a question directed to NB Power.

It is with respect to the certify employee at Point Lepreau. Is there a student enrollment and success concern? According to Gordon Dalzell in submission M36.3 there is, so I would like to hear it from Point Lepreau.

Thank you.

MR. NOUWENS: Good morning. Jason Nouwens, for the record.

I just want to point out before I turn

it over to Mark Power to answer the specific question that Gordon Dalzell is one of our intervenors that we had the opportunity to meet face to face with, and this is one of the areas that we have engaged with him and understand what his concerns are.

But I will turn it over to Mark Power as Site Vice-President to give an overview of our recruitment program specifically around certified staff.

MEMBER LACROIX: Thank you.

MR. NOUWENS: Over to you, Mark.

MR. POWER: Okay. Thank you for the question.

We certainly do have a recruitment program here where we looked ahead proactively. We've been running the programs -- we are actually running more programs right now than we have ever ran at the station in the past.

We did take a pause through refurbishment, our refurbishment back in about 10 years ago, and lasted for around four years. And through that program or that portion of our operation,

we did pause them and it required us to do a lot of catch-up as a result coming out of refurbishment.

So we are now currently running more programs than we ever have. We have cleared our risk item in this area where we have adequate staff now in both shift manager positions and control room operator positions, the two certified positions in the control room, and we have even enough now to put them in other parts of the organization so that we can have more operational focus in some of the other departments.

MEMBER LACROIX: Okay, good. Thank you very much.

MR. POWER: You're welcome.

MS. McGEE: Thank you very much.

I see no further hands up from Commission Members, but yes, President Velshi.

THE PRESIDENT: Sorry. It's hard to see my hand up on the screen, so you'll have to look at the participants' list to see it.

I have a few fairly short questions based on this intervention. And Mr. Nouwens, I'm very happy to hear that you actually do meet with the

intervenor and follow up with things -- issues that he has raised.

One is around the authorization from Department of Fisheries and Oceans and how long it takes to get the authorization -- well, for the application and the authorization.

And so maybe I can turn to the representative from DFO and maybe if you can share with us, is this fairly typical that it takes four years, five years or however long the cycle is to get this authorization, and specifically around Pickering?

MS. EDDY: Sara Eddy, for the record. I'm Acting as the Manger of Regulatory Review for Fisheries and Oceans Canada.

So the question you asked was how long it takes to get an authorization? Was that your question?

THE PRESIDENT: Yes.

MS. EDDY: So it really does depend on the application process and what the proponent provides to us. So it can take some time, depending on, you know, the package provided to us, and our

questions back and forth.

In terms of legislative timelines, we have regulations in the *Fisheries Act* that allow for 60 days for us to deem an application complete once it’s received from our proponent. And then following complete application received we have 90 days to issue the authorization. But the 90 days can be stopped for various reasons, including consultation, for example.

Does that answer your question?

THE PRESIDENT: Partly, that you actually do have some standards. It’s just that as I look at the one in front of us, like it’s been in the works for all of five years now. And maybe you can shed some light on what are the issues and when do you expect to give authorization for corporate?

MS. EDDY: Are you referring to the comment in the intervention about Darlington Offsetting Plan?

THE PRESIDENT: That's probably it, yes.

MS. EDDY: I’m afraid I don’t understand that intervention comment. It says --

THE PRESIDENT: Oh, okay.

MS. EDDY: -- I think the comment was that it was five years to have the Offsetting Plan delayed, but that Offsetting Plan was prepared prior to the authorization being issued, and that authorization was issued in 2015.

THE PRESIDENT: Okay.

DR. VIKTOROV: Perhaps it’s about Point Lepreau. That’s the only NPP that doesn’t have authorization yet.

THE PRESIDENT: So what's the status of authorization for Point Lepreau then?

MS. EDDY: I'm afraid I can't speak to Point Lepreau. I work in the Ontario and Prairie Region of DFO.

THE PRESIDENT: Okay.

MS. EDDY: So I apologize, I can’t answer that question.

THE PRESIDENT: Anybody from Point Lepreau?

MR. NOUWENS: Jason Nouwens, for the record. I can give an update on our *Fisheries Act*

authorization.

So it has been a bit of a long process, but I'll try to summarize it succinctly.

We did file an original application for Point Lepreau specifically, that based the offsetting requirements on Lepreau in studies that we conducted. We did have extensive engagement with our local communities, our local fishermen, as well as our First Nations.

Subsequent to that though, we superseded our application with a corporate-wide application, which is relying on the decommissioning of a hydro dam in Milltown, which is about an hour and a half to the west of us currently. So right now the *Fisheries Act* authorization process is waiting for the impact assessment of the removal of that dam to be completed prior to finalizing the *Fisheries Act* authorization.

So it is moving, it is taking a little bit longer maybe than we would have anticipated, but it is being actively progressed and that impact assessment, as you know, takes a bit of time to

conduct those thoroughly. So that's the current phase it's at.

Once that impact assessment is complete then we'll proceed with the actual issuing of the authorization.

THE PRESIDENT: Ms. Bramma, you wanted to add something?

MS. BRAMMA: Yes, please. Kristina Bramma, for the record. There is a note in the intervention around the length of time that it took for a report to be issued regarding the Darlington Offsetting Plan.

I would just like to note that OPG has conducted all field activities and issued all reports per the requirements of the Darlington *Fisheries Act* authorization to DFO. They have been submitted on time with dates ranging between 2015 and 2020.

The Big Island wetland fish habitat bank was actually constructed back in 2013/2014 and is a bank for both Pickering and Darlington.

So we have submitted all reports on time per the authorization. End of comment.

THE PRESIDENT: Okay. So then switching gears. The intervenor raises concerns with the increasing trend in radiation dose. So if we look at Staff's CMD on page 43, Table 8, provides the doses for the different facilities, both external and internal, and then Figure 8 shows the trend over time.

Maybe a couple of questions. One is if the Bruce B and the Darlington doses, maybe a significant portion is from the major component replacement or refurbishment, I just wondered why such a big difference in the doses. For Bruce B it's over 12,000 pSv and for Darlington it's just over 2,000.

What are the unique differences between the two facilities that would result in one having such a higher external dose?

Maybe I'll ask Staff who get to see both facilities, and can you comment on that first?

DR. VIKTOROV: It's Alex Viktorov, let me begin and then our Radiation Specialist will chip in.

The radiation doses ups and downs are mostly driven by outages, forced outages, planned,

unplanned, or outages for refurbishment activities.

So if it is counted for this effect, then overall long-term trend is generally down. We have ascertained this and we are satisfied with overall licensee performance.

But it's always a target in each outage to optimize and minimize dosages by workers. But it cannot be reduced to zero.

And at this point, I will hope our Radiation Specialist will step in.

MS. PURVIS: Caroline Purvis, I'm the Director of the Radiation Protection Division, for the record.

So in reference to Table 8 in the Staff's CMD, as noted, Bruce Power's Unit -- Bruce B doses are significantly elevated relative to Darlington in terms of collective dose.

It's my understanding that of course the refurbishments are not at the same stage. For Bruce B, they're during the past year, it was more of a dose-intensive year in terms of some of the activities.

But that being said, if you wanted more technical details on the difference between the two in terms of the timing and the activities that are being undertaken, I would ask one of my specialists, Dr. Djeffal, to compliment my answer.

THE PRESIDENT: Well, maybe to help me better understand. Because if I look at Darlington and the trend over the previous years, there is one period that they are both going through the same activities and Darlington is still much much lower.

For these large refurbishment or MCR projects is there a dose budget, and I suspect there is, how does it vary between those two facilities per unit?

And I see Ms. Duarte from OPG has her hand up, so maybe she wants to give some insight while Staff's getting their response together.

So, Ms. Duarte, over to you.

MS. DUARTE: Thank you very much, Mary Duarte, Director of Radiation Safety for OPG. Thank you for the question.

In terms of dose, I think it's

important to understand the scope of work and where, for example, the refurbishment plan was in its journey of refurbishment. Sometimes there's a lot of good overlap for a comparison basis between the MCR work and the refurbishment of Darlington. So it's important to understand what activities are taking place.

Similarly for outages, it depends on the scope of the outages. So that's what I would attribute the dose increases as stated in the ROR report.

What I would add is also that those expenditures are done thoughtfully. We have an ALARA program where we are careful in terms of allocation of dose. We make sure that the work is properly planned, it's done by qualified workers. We use innovation and technology where it's possible. We review our work so that we can gather the lessons learned.

And the outcome of this is that dose to workers is kept at a minimum. We have not exceeded any regulatory limits, and this is consistent with a safety culture and also a culture of continuous

improvement.

Thank you.

THE PRESIDENT: Thank you. Mr. Djeffal?

MR. DJEFFAL: Bonjour. My name is Salah Djeffal, Radiation Protection Specialist. So I will speak to Bruce Power B, Unit 6.

So there is a budget for every work done and for Unit 6 specifically at the end of 2020 the dose budget for the work -- completed, the dose was driven by removal series and the dose target was 10.02 p-Sv. The actual dose was 9.9 p-sv.

So if you look at the table in the CMD report and we remove the 9.9 from the CMD, the collective dose will be really equal or even less that last year. So the main dose was driven by the removal series of Bruce B.

The doses are under control, no worker got any unplanned doses, it’s planned controlled and the ALARA is effective.

THE PRESIDENT: Thank you. And so for those similar activities, which could have happened at

the Darlington site a year prior, would dose consumption have been equivalent?

MR. DJEFFAL: It will be equivalent for an equivalent source term, so they will be equal -- within plus or minus.

THE PRESIDENT: It's not the source term. I'm talking about for the activity. And maybe this is an action you can take.

If you look at the full refurbishment or MCR for a unit, I'd find it helpful if you can give me what the total estimated dose budget is for Bruce 6 and if you --

MR. DJEFFAL: I can speak to Point Lepreau and Darlington too. The dose budget for the refurbishment of Point Lepreau was 12 person Sv, for Darlington it was 23, I think, I don't have exactly the final number. For Bruce B, Unit 6, it's about the same. Because same technology, same number of channels, et cetera.

THE PRESIDENT: Thank you. That's what I wanted --

MR. DJEFFAL: Now, we can compare

Darlington to Bruce B, but we cannot compare, like, a 600 MW Unit to a 900 MW --

THE PRESIDENT: Thank you. Thank you. That answers my question. Thank you.

Ms. McGee.

CMD 21-M36.4

Written submission from Curve Lake First Nation

MS. McGEE: The next submission is from the Curve Lake First Nation, as outlined in CMD 21-M36.4. Are there any questions from the Commission Members on this submission?

So I'll start with Dr. Berube.

MEMBER BERUBE: Thank you, all my questions have been answered. Thanks.

MS. McGEE: Mr. Kahgee?

MEMBER KAHGEE: Thank you. Just a quick question, and I think it's been touched on at different points throughout the morning. It has to do with the *Fisheries Act* authorization for Pickering.

I'm just curious as to what the level

of engagement has been with Williams Treaties First Nations, particularly in terms of the development and implementation and with respect to mitigation and offset measures? Perhaps that's for OPG and CNSC.

MS. McGEE: Ms. Bramma, you have your hand up?

MS. BRAMMA: Kristina Bramma, for the record. I'm not sure if CNSC Staff would like to take this first, but I can provide some insight as to that.

So the engagement with Williams Treaties First Nations with respect to the Pickering *Fisheries Act* authorization is quite extensive. We do meet with them regularly, along with the DFO and CNSC Staff, and more specifically with Curve Lake First Nation and other Indigenous communities.

The discussions are intended to share information, discuss our operations on aquatic life and also keep in mind the interests of the Indigenous communities. And we do look forward to continuing to build our relationship with these communities, the regulators, the public, and all stakeholders.

Thank you.

MS. McGEE: Thank you very much. I don’t see any of the other Commission Members. President Velshi, do you have any questions before we go ahead to the next intervention?

Thank you very much.

CMD 21-M36.5

Written submission from the

Canadian Nuclear Workers’ Council

The next submission is from the Canadian Nuclear Workers' Council, as outlined in CMD 21-M36.5.

Are there any questions from the Commission Members on this submissions?

Dr. Lacroix, we’ll start with you.

MEMBER LACROIX: No, I have no questions on this matter.

MS. McGEE: Thank you very much. I don’t see any other hands up for this submission. So that completes this intervention.

Thank you.

THE PRESIDENT: So I guess this completes all our written submissions. So we will now move to our general round of questions. We'll start with Dr. Demeter.

MEMBER DEMETER: Thank you very much. In keeping with the theme of broad stroke policy questions.

So we've been in the midst of COVID, we're in our fourth wave. And based on the submissions, and this sort of applies to all the RORs but, you know, from a safety point of view specifically to this one, effective March 16th, 2020 all CNSC Staff in Ottawa and at the regional and site offices were directed to work from home.

I want to get a sense from a corporate policy point of view from CNSC, how they dealt with the broad stroke policies for essential workers in Canada, whether it be healthcare, transport of goods, working in grocery stores and pharmacies for retail. And how inspections fit into that spectrum.

Because my understanding is that the on-site inspections were significantly curtailed

during the period. And how did you make that decision based on essential services in other sectors of the Canadian public?

Sort of give me a sense of the rationale, why this wasn't considered an essential service for inspections compared to other similar decisions in other sectors.

DR. VIKTOROV: I will attempt.

MEMBER DEMETER: Sure. I'll just make it very clear, how did CNSC decide that on-site inspections were not considered an essential service given the essential service parameters and metrics for other industries and sectors in Canada? That's where I want to go.

DR. VIKTOROV: I will yield my mic to Mr. Jammal.

MR. JAMMAL: Thank you, Dr. Viktorov. It's Ramzi Jammal, for the record.

The CNSC followed the Government of Canada essential services categorization for activities. So there was a graduated approach from essential services, let it be from CBSA to Transport,

as it was mentioned. So we followed the Treasury Board criteria with respect to essential services.

So what does this mean from a policy perspective? We were able to demonstrate -- not just to demonstrate, but to justify the fact that the CNSC oversight is one of the essential services.

All of our executive members drafted and put in place an authorization letter so that our inspectors can cross provinces, authorizing them that they are providing an essential service.

And on that note, if there is any one of our corporate service staff is ready to provide you with complimentary information, we can provide you with that.

So the key point here is essential services determined to be by the CNSC in order to continue oversight, and we were recognized by the Treasury Board that we are an essential service.

But for the precision, I will ask if our DG for Human Resources is available.

But, in conclusion, the policy was driven by Treasury Board and we were consistent with

all other jurisdictions equal to the CNSC for essential services. I'm not going to name other regulatory bodies, but we can look at the CER, we can look at CFIA.

But the CNSC did not stop work, that's one thing I would like to say regardless of the classification or not. So we never compromised safety with respect to our regulatory oversight. When I say we never compromised safety, is our IT deployment was key because the work did not stop.

So regardless of the categorization, but we were equal to any other government entity with respect to essential services. We were categorized based on the services being provided, and we were designated as essential services and we took action in order, as I mentioned, to allow our staff.

I personally had letters drafted and signed to our staff to cross provinces between Quebec and Ontario, or any other provinces so that they're able to come and conduct their activity. In other words, they would not be stopped at the border when there were verifications taking place.

I hope I answered your question.

DR. VIKTOROV: If I may compliment the response provided by Mr. Jammal.

CNSC also has internal business to continue and to plan, and it also identifies a priority of our services we deliver internally. And site inspectors are certainly one of the top priority staff who would be called upon in case of emergency. And that was activated during the pandemic response.

So all inspections were paused, not really cancelled, they were paused for a short period of time. In case of emergency, they could have been conducted without really any pause in our activities. But in an abundance of precaution inspections were not done actively during approximately one-month and a half, and then gradually resumed in accordance with priorities and whether they could be done remotely or required on-site presence.

So again, respecting all the government policies and precautions, we cannot say that our activities terminated. They were slowed down, paused and resumed safely, quickly.

THE PRESIDENT: Thank you. Mr. Kahgee.

MEMBER KAHGEE: Thank you. Just coming back to one issue with respect to nuclear emergency management efforts. I'm just curious from the operators, whether or not there's been outreach to Indigenous communities to include them in those plans? Perhaps CNSC could comment as well?

THE PRESIDENT: Dr. Viktorov?

DR. VIKTOROV: Well, I expect that the licensee will take the first stab at it.

Again, CNSC Staff maintains ongoing engagement with communities, including Indigenous communities in the vicinity of our plants. And we, in our regular meetings, take pulse of what are the issues of particular interest and we provide information about the emergency provisions and plans and the particular exercises that would take place.

And I will have to rely on our expert in the Indigenous engagement, if they have additional information that is purely specific to participation or input in preparation for our emergency exercises.

MS. CATTRYSSE: This is Clare Cattrysse, I'm the Director of the Indigenous Stakeholder Relations Division.

I think all I can really say is that we meet with Indigenous communities on a regular basis. For example, the SON, MNO and Curve Lake, we have talked, because they've asked us to come and talk about the topic of emergency matters, so we have. So we are responsive to that.

We've also engaged with groups on the KI Pill Working Group and on the documentation from that as well.

We tend to work with each community and find out what their issues are, and if they want to talk about these matters, we do.

I hope that answers your question. Thank you.

THE PRESIDENT: Well, maybe we can see if any of the licensees want to give their perspective on this?

MR. SCONGACK: Thank you, President Velshi. James Scongack, for the record.

So I would add two specific comments to answer Mr. Kahgee's question. So the first is related to emergency exercises, those are well-documented and understood broadly. And the short answer, Mr. Kahgee, is yes absolutely, we engage with Indigenous communities on those exercises up to and including an offer for those communities to participate as part of literally the dozens and dozens of other government agencies, whether it's local volunteer fire departments, and other first responders. So we include that.

I should also say that one of the areas that we continue to work closely with indigenous communities on is also enhancing the emergency response capabilities that they have in their community to respond to emergencies, because obviously many of our employees live in those communities, are part of those communities, and that is really important.

I do want to go back to one particular point that was brought up earlier regarding the Provincial Nuclear Emergency Response Plan as it

relates to broader engagement and indigenous consultation.

Bruce Power did not feel that the development of that report by the province certainly did not engage licensees effectively and we had a number of comments on that report. In addition to providing comments to the province on that report, we also produced an independent report taking into account a number of the areas of feedback that we provided and we posted that on our website. So people don't need to request it, they can go on the website and get that directly. That was the subject of our regular updates between the three indigenous communities as per our protocol agreements we have in place.

THE PRESIDENT: Thank you, Mr. Scongack.

Ms. Maharaj...?

MEMBER MAHARAJ: Thank you, Madam Velshi.

I have a bit of a general question and it appears in a number of different places throughout

submissions this morning and it is with respect to internal tritium exposure events. So in particular in CMD 36 at page -- it is 112 of the PDF, it speaks to increasing trend of unplanned internal tritium exposure events being observed and self-identified by OPG.

Perhaps if staff could first give a bit of an understanding of what are the health impacts of internal tritium exposure and, you know, what duration of impact has to happen in order for there to be a health consequence if there is one, and is there proactive or prophylactic treatment for this kind of exposure?

DR. VIKTOROV: Alex Viktorov, to begin with.

Please note that all radiation dose limits have been respected in all facilities, including the exposure to tritium, so we don't really expect any health effects to be manifested at all.

I will ask Caroline Purvis to provide any additional insight in tritium-specific effects.

MS. PURVIS: Caroline Purvis, for the

record. I am the Director of the Radiation Protection Division.

So with respect to the section of the CMD that you are making reference to, I think just from a context point of view workers in the nuclear power plant are subject to low-level tritium exposures. This happens often in cases in which systems are opened, maintenance activities occur. So tritium exposures are controlled. They are planned, controlled and maintained as low as reasonably achievable.

When they do occur, they are usually extremely low. I would have to ask one of my specialists to give sort of a sense of, you know, what would be the dose consequence, but they are, generally speaking, a small percentage of the overall dose that is received by a worker.

With respect to health effects, if we just take a step back and we look at the setting of dose limits that are included in our regulations, they are set at a level in which there would be no expectation that there would be a health effect. So

from that point of view, although it is identified that low-level unplanned tritium intakes are occurring, in the past year, in 2020 at Pickering it was identified, its corrective actions are in place and CNSC staff are satisfied that workers remain protected.

MEMBER MAHARAJ: Ms. Purvis, how do you measure tritium intake?

MS. PURVIS: Yes. Thanks very much.

So in this type of assessment there is a dosimetry program. It is a licensed program for all our nuclear power plants and they will collect urine samples from workers. So they do it on a certain frequency to ensure that there is timely information about the potential for intakes. If there is an intake, there may be more bioassay submissions required to refine the dose. So all workers are on a certain frequency of monitoring to ascertain and record their doses.

MEMBER MAHARAJ: Okay. Thank you.

THE PRESIDENT: Dr. Berube...?

MEMBER BERUBE: I have a couple of

questions pertaining to post-Fukushima issues. I guess most of this pertains to Bruce, but the question has to do with the coolant makeup systems in regard to the heat transport system and the moderator makeup system. I think these additions are just the ability to actually inject emergency water if that is -- can you bring us up to speed on where that is? The report says it was ongoing, but is that still ongoing or is that completed at this point?

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

The last piece was -- to be completed was in Unit 6, the moderator makeup. All the other units are complete and the moderator makeup is being added to Unit 6 during the current MCR and will be in place for return to service.

MEMBER BERUBE: Just one other thing while I have you on. The actual emergency radio system, too, was due for replacement I guess this year. Has that been concluded as well?

MR. BURTON: Maury Burton, for the record.

Your timing is almost impeccable on that. The final commissioning was actually completed yesterday for that project. So it is now fully installed and functioning.

MEMBER BERUBE: Thank you for that.

THE PRESIDENT: Thank you.

Dr. Lacroix...?

MEMBER LACROIX: Thank you.

This is a question for staff. It is with regard to the major component replacement project going on at Bruce.

During an inspection, staff observed a declining trend in the contractor's performance, namely on foreign material exclusion. Could you elaborate on this?

DR. VIKTOROV: Jeff Stevenson, one of our site inspectors, will be happy to provide additional information.

MR. STEVENSON: Jeff Stevenson, CNSC Site Inspector, for the record.

Yes. So in early 2020 -- or in 2020 there were a number of contractors that were coming

onsite to execute some of the activities related to the major component replacement project and as part of that the foreign material exclusion events that were mentioned in the report were really around dropped objects down into the fuelling machine duct during the bulkhead installation as well as other material that was dropped into other open systems. Obviously this does not pose a risk at the moment as the unit is shut down, defuelled and dewatered, but as the unit begins to return online there need to be adequate controls in place to ensure that the systems are clean.

Now, as these items were identified, Bruce Power took appropriate corrective actions to address each one of the issues in terms of retrieving the objects, ensuring that systems were cleaned as they go.

As CNSC staff, we wanted some assurance that the trend that we were observing was being taken into consideration and that more comprehensive corrective actions were taking place.

As a result, Bruce Power did implement additional measures to provide oversight of their

contractors and as a result we did close the action item that we had raised on them at of time.

So going forward we will continue to monitor the situation, but at the current time we believe that contracting performance has improved to the level that we are looking for. Thank you.

MEMBER LACROIX: And when you talk about dropping material, what sort of material, tools or metal dust or what is it exactly?

MR. STEVENSON: Jeff Stevenson, for the record.

So yes, it can be any number of things. It can be individual tools, it can be bolts that were -- you know, individual bolts that were dropped, any other material that might be used as part of the construction activities there.

MEMBER LACROIX: Okay. Okay. Thank you very much. That's good.

THE PRESIDENT: I have a couple of questions and, Commission Members, if you have additional questions, just use the Raise Hand function.

My first one is to staff on CMD 21-M36, page 48, around conventional safety performance. There is a Figure 11 and a Figure 12 that provide trends for accident severity rate as well as accident frequency and there is a comparison with Canadian industry. So what constitutes "Canadian industry" here?

DR. VIKTOROV: In this particular case -- Alex Viktorov, for the record -- it's average numbers on the nuclear power plants --

THE PRESIDENT: Okay.

DR. VIKTOROV: -- but if I didn't get it right I will invite my colleagues to correct me.

THE PRESIDENT: Because if that is the case, which I think it is if I just look at the numbers, I think we should say that. I thought you were comparing it to Canadian industry average and see how the nuclear industry compares to that, but thank you for that clarification.

DR. VIKTOROV: Yes, we could have been more clear.

THE PRESIDENT: Thank you.

And my second question is for OPG. So with the decision not to proceed with the low-and intermediate-level waste DGR, what are the long-term plans being considered for the final disposal for low- and intermediate-level waste? And maybe if you can also comment on what does that mean for financial guarantees for waste?

MR. AGGARWAL: Thanks, President Velshi, for your question.

This is Kapil Aggarwal, Director for Eastern Operations and Nuclear Sustainability Services for OPG, for the record.

So OPG has committed not to proceed with the low- and intermediate-level DGR project without the support of the Saugeen Ojibway Nation. In January 2020 a vote was conducted and the results indicated that the SON did not support the project. OPG respected the decision of the First Nation and proceeded to cancel the project.

OPG remains committed to developing permanent disposal solutions and we are actively participating in the work that NRCan is leading to

engage Canadians with regards to modernizing Canada's radioactive waste policy framework and developing national integrated strategy for radioactive waste. Once completed, this work will help inform OPG on next steps with regards to developing permanent disposal solutions.

In the meantime, OPG has a proven track record for safely managing waste generated from our operations and we will continue to do so until permanent disposal facilities are developed. Thank you.

THE PRESIDENT: Thank you.

So the second part of my question, Mr. Aggarwal, was given that there may be a further deferral of the long-term disposal, what impact does that have on the financial guarantees associated with waste?

MR. AGGARWAL: So we have submitted our financial guarantees to the CNSC and we are not identifying any impacts at this point in time. We will continue to manage our waste in an interim measure until permanent disposal solutions are

prepared and our financial guarantees will be set accordingly.

THE PRESIDENT: Thank you. Thanks for that.

Dr. Demeter...?

MEMBER DEMETER: Thanks.

This is for staff just to clarify. My reflection may be incorrect from past, but if I look at Figure 11, like Madam Velshi had commented, it is a Trend of accident severity rate for nuclear power plants and Canadian industry and it says it covers all employees, not including third party contractors.

I have a recollection that we had had this discussion before and we were going to include third-party contractors in lost time injury statistics, if not folding them right in or actually having a separate report, because they could be a major part of refurbishment.

So talk to me about why we are not reporting on lost time injuries for third-party contractors, especially if they are onsite, because that may significantly change the flavour of what you

are presenting.

DR. VIKTOROV: Alex Viktorov.

This discussion is still ongoing. The current reporting is consistent to past years and we are looking if any refinement is appropriate and we are following the best trends within the Canadian industry.

I will ask Kim Hazelton to elaborate on where we are and where we are going -- or Bartek Rzentkowski.

MS. HAZELTON: Kim Hazelton, Director of the Power Reactor Licensing Integration Division, for the record.

Just I would confirm Alex Viktorov's response.

I believe Bartek Rzentkowski could provide some additional information regarding some proposed changes to our REGDOC-3.1.1 Reporting Requirements at this point.

MR. RZENTKOWSKI: Yes. For the record my name is Bartek Rzentkowski.

There was a closed Commission action

where CNSC staff had consulted with industry in terms of how we can incorporate third-party contractor data as part of the safety performance indicator that we have for conventional health and safety under our REGDOC-3.1.1, which is reporting requirements for NPPs. So our understanding was that this third-party contractor data was available for the last five years and we recommended as part of the memo sent to the Commission to propose the inclusion of the third-party contractor in the next revision of REGDOC-3.1.1.

MEMBER DEMETER: I guess two short supplementaries, like timelines for the revision and the second one is if you have the data for the last five years, it would be quite reassuring to see that there's no red flags in it. You could report that as a separate body of -- a separate graph. So timelines, and if we have the data, it would be nice to have a summary statement of what it tells us.

DR. VIKTOROV: Well, I can quite -- on the timelines, Regulatory Document 3.1.1 is in the last stages of internal consultations and it will go to be consulted externally in the next month or so.

It is very close to being open for public input. It will take still several months to complete and have it revised and then to incorporate in our licensing basis to make it part of the -- well, licences for all power plants.

With regard to red flags, I don't believe there are any red flags because the third-party contractors are also monitored. They are just not captured on the reporting that we receive through REGDOC-3.1.1 reports. But perhaps the licensee can confirm what they see among the incident and accident rates among the contractors.

THE PRESIDENT: Well, let's go through each one of them then. Let's start with Bruce Power.

MR. MUDRICK: Yes. Chris Mudrick, for the record, Bruce Power.

So we do track contractor rates, injury rates. They are displayed to our whole team and acted upon with trends and so they are absolutely in our process. Again, the REGDOC should be upgraded if that is what the information that we want supplied is, but we certainly monitor and have no problem

taking action on that. There is no red flag trending I would say right now, it's consistent with best practices and there is certainly an MCR across the construction industry.

THE PRESIDENT: Thank you.

OPG...?

MR. BAGSHAW: For the record, Steve Bagshaw, Director of Operations and Maintenance for our Darlington Refurbishment Project.

With respect to monitoring contractor safety, contractors here at OPG and at the Darlington refurbishment project are fully integrated into our overall model. We do work with our vendor partners and contractors and do track any items of conventional safety. We do track that.

And what I will say is, you know, we continue to have strong safety performance here, both at OPG and at our refurbishment project, with vendor engagement with conventional safety and continue to have the highest safety standards and actively seek opportunities to continue to improve our safety performance. So contractors and vendor partners are

completely engaged in that program with us here at OPG. Thank you.

THE PRESIDENT: Thank you.

Hydro-Québec, Monsieur Desbiens?

M. DESBIENS : Oui. Patrice Desbiens, directeur adjoint des installations de Gentilly-2, pour le verbatim.

Je vous confirme qu'Hydro-Québec prend autant soin de la santé et la sécurité de ses entrepreneurs que de ses employés. Si des blessures surviennent, c'est documenté puis c'est traité de la même façon.

Pour ce qui est du site précis à Gentilly-2, je vous confirme qu'il n'y a pas de drapeau rouge. Il n'y a pas de tendance... Il n'y a pas d'événement malheureux à signaler. Donc, il n'y a pas d'inquiétude présentement.

LA PRÉSIDENTE : Merci.

M. DESBIENS : Merci.

THE PRESIDENT: New Brunswick Power?

MR. NOUWENS: Thank you.

I just want to highlight that we are

consistent with the industry, but I will turn it over to Krista Ward, who is our Director of Continuous Improvement and Emergency Services, for additional comments.

Krista...?

MS. WARD: Thank you, Jason.

For the record, Krista Ward, Director of Continuous Improvement and Emergency Services.

We are consistent with our peers in that we do track our contractor injuries as well as hours associated with the work that they are doing as well.

THE PRESIDENT: Okay. Thank you. I think that covered all.

Okay, let's move to Ms. Maharaj then.

MEMBER MAHARAJ: Thank you, Madam Velshi.

This one is a quick one. With respect to the IAEA inspection that occurred, I noted that both Pickering and Bruce had the same non-compliance and that was that the inspectors were unable to access some of the spent fuel assemblies as a result of some

obstruction or restricted access in some of the bays.

Perhaps the licensees can respond, firstly why this non-compliance occurred, but perhaps as well has it been corrected and is there some means by which either the inspector returns to verify or you report back to ensure that there has been compliance with this issue?

Bruce and Pickering --

THE PRESIDENT: Mr. Bevacqua...?

MEMBER MAHARAJ: Bruce and Pickering in particular, Madam Velshi.

MR. BEVACQUA: Val Bevacqua, for the record.

So in regards to the question, the issue of inaccessibility of fuel bundles following the IAEA inspection audit has resolved for the time being in an acceptable manner to the IAEA as a result of significant process made to make fuel accessible for IAEA inspections on demand. The long-term inaccessibility of fuel has been sealed off by IAEA and we have provided this correspondence back to staff.

THE PRESIDENT: Thank you.

Bruce Power and staff, do you wish to add to what we have heard from OPG?

Mr. Mudrick...?

MR. MUDRICK: Chris Mudrick, for the record.

I'm sorry, I do not have the information on that, but we can get that information for you. I don't believe that there is any problem with the inspectors coming back, but I will ask about it.

THE PRESIDENT: Let me just ask CNSC staff. Are there any unresolved issues on this front?

DR. VIKTOROV: Alex Viktorov, for the record.

I don't believe there are any unresolved issues, but the path towards resolution takes time because it requires moving significant amounts of spent fuel in the base and it takes time to conduct it safely. Gradually licensees are working towards providing access to a certain small number of spent fuel that cannot be inspected directly. So I

believe there is an acceptable path forward.

I will invite David Moroz to provide the specialist perspective.

THE PRESIDENT: Thank you.

MR. MOROZ: Thank you.

David Moroz, Director of International Safeguards Division at the CNSC.

I will just reiterate what Dr. Viktorov and what the operators have indicated. The IAEA has worked collaboratively with the CNSC and with the operators to make sure that any fuel that was inaccessible is being made accessible. Great strides have been made in some of the areas since the issue was first brought to light by the IAEA.

For the remaining small amount of fuel that remains inaccessible, the IAEA has taken steps to ensure that that is under IAEA seal and will be re-verified at a later date when it becomes accessible.

But again, great strides have been made to make most of the initially identified fuel accessible for verification and that is ongoing.

Thank you.

THE PRESIDENT: Thank you.

Dr. Lacroix...?

MEMBER LACROIX: To follow up on fuel, j'ai une question pour Hydro-Québec.

Le pourcentage de grappes de combustible défectueuses que vous avez retirées de Gentilly-2, est-il comparable à celui d'autres réacteurs CANDU?

M. DESBIENS : Patrice Desbiens, directeur adjoint des installations de Gentilly-2, pour le verbatim.

Écoutez, je ne peux pas comparer à nos voisins. Je peux vous donner nos chiffres. Donc, on a disposé de 35 grappes défectueuses sur 130 000 de toutes les grappes qui ont passé à travers le réacteur de Gentilly-2. Donc, c'est un petit pourcentage : 35 sur 130 000. Maintenant, est-ce que c'est similaire, comparable à ce que les autres ont vécu? Je ne peux pas m'avancer pour répondre.

MEMBRE LACROIX : D'accord.

Et vous avez parlé de 136 [*sic*]

grappes défectueuses.

M. DESBIENS : Trente-cinq. Trente-cinq grappes défectueuses...

MEMBRE LACROIX : Ah, 35. D'accord.

M. DESBIENS : ...sur 130 000 grappes qui ont été dans le réacteur.

MEMBRE LACROIX : D'accord.

Et ces grappes défectueuses, comment vous trouvez les défectuosités? Observation simplement?

M. DESBIENS : Patrice Desbiens.

Pour... Lorsque le réacteur était en opération, il y avait des systèmes qui détectaient des petites suites provenant des grappes de combustible, qui relâchaient des trucs qui normalement ne sont pas relâchés dans le réacteur. C'est un indice qui nous permettait de savoir qu'il y avait quelque chose d'anormal avec une grappe et, à ce moment-là, on les évacuait aux piscines de façon immédiate. Et au total, sur 30 ans d'exploitation, bien, c'est arrivé pour 35 grappes de combustible.

MEMBRE LACROIX : D'accord. D'accord.

Et l'information que vous avez, est-ce que vous la partagez avec les autres COG owners?

M. DESBIENS : Oui, tout à fait. Patrice Desbiens, pour le verbatim.

Oui. On a au fil des années fait des analyses pour comprendre pourquoi. C'était des défaillances mineures, mais néanmoins des défaillances qui nécessitaient de mettre ces grappes de côté. Puis je me souviens à l'époque il y avait des projets de recherche avec le CANDU Owners Group, avec COG, pour tenter de profiter de ces incidents-là pour rendre plus robustes les grappes de combustible et procédés de fabrication. Alors, c'était effectivement partagé.

MEMBRE LACROIX : D'accord. Merci beaucoup.

THE PRESIDENT: Okay. Well, thank you very much. This completes the discussions related to the Regulatory Oversight Report on Nuclear Power Generating Stations. A special thanks to CNSC staff and to the licensees in particular because of the really challenging times that they have had in the last almost two years, and in spite of that we have

seen excellent performance, excellent oversight, continuous improvement, and so I thank you for that. And thank you for your participation today.

We will take a break now and we will reconvene at 2:00 p.m. Eastern Standard Time for the Regulatory Oversight Report for Uranium Mines, Mills, Historic and Decommissioned Sites in Canada for the year 2020. So we shall see you at 1400. Thank you.

--- Upon recessing at 1:03 p.m. /
Suspension à 13 h 03
--- Upon resuming at 2:00 p.m. /
Reprise à 14 h 00

THE PRESIDENT: Good afternoon, and welcome back.

We're ready to move to the next item on our agenda, which is on the Regulatory Oversight Report for Uranium Mines, Mills, Historic, and Decommissioned Sites in Canada for 2020.

The public was invited to comment in writing. The Commission receive eight submissions.

Three Indigenous Nations or communities will be making oral presentations. We will proceed with the interventions after CNSC staff's presentation.

Before turning the floor to CNSC staff for its presentation, I would like to acknowledge that representatives from the following departments are joining us and will be available for questions: Saskatchewan Ministry of Labour, Saskatchewan Ministry of Environment, Saskatchewan Ministry of Energy and Resources, Ministry of Government Relations, and Saskatchewan Health Authority.

I'd also like to remind participants who are going to have their microphone on, can you please switch off your notifications so it doesn't disturb the rest of the proceeding, please.

And with that, I'll turn the floor over to Mr. Burton to make the staff presentation. Mr. Burton?

CMD 21-M34/21-M34.A

Oral presentation by CNSC staff

MR. BURTON: Good afternoon, President Velshi and Members of the Commission.

My name is Patrick Burton. I'm the director of the Uranium Mines and Mills Division at the CNSC.

I'm here today as part of the CNSC staff team responsible for CMD 21-M34, the Regulatory Oversight Report for Uranium Mines, Mills, Historic, and Decommissioned Sites in Canada. This report covers the 2020 calendar year for the active sites and the 2018 through 2020 calendar years for the historic and decommissioned sites.

Throughout this presentation, we will be using the acronym R-O-R or just saying ROR to describe CNSC staff's regulatory oversight reports.

Before we continue, staff wish to draw the Commission's attention to minor errors which have come to light in CMD 21-M34, which are detailed in Annex A of this presentation. These are all of an

administrative nature and have no bearing on staff's assessment of safety at the sites covered by this ROR. Data in the presentation that has been corrected has been highlighted for easy reference.

Shown here is the outline of our presentation to you today. We will provide a high-level overview of how CNSC staff exercise our regulatory oversight, before describing the sites covered by this ROR, CNSC staff's regulatory efforts and assessments, our Indigenous engagement work, other matters of regulatory interest, and finally the themes from the interventions received. At the end of the presentation, I will provide CNSC staff's overall conclusions.

This slide puts the Uranium Mines and Mills ROR in context with the full set of RORs produced each year by CNSC staff. RORs are an important vehicle for transmitting regulatory information to the Commission, to Indigenous Nations and communities, and to the public.

I'll now provide an overview of some key aspects of this report before we speak to each

site specifically.

This ROR documents CNSC staff's regulatory efforts in assessing licensee performance for mine and mill sites, both operational and historic.

Regulatory oversight includes licensing, compliance, and reporting to the Commission. The intensity of oversight is risk-informed, that is, it is proportional to the risk associated with the licensed site and activities and to the performance of the licensee.

For each licensed site, CNSC staff create a site-specific compliance verification plan, which includes the number and scope of inspections to be carried out over a 10-year period. These plans are regularly reviewed and revised if needed.

CNSC compliance verification activities are primarily in the form of desktop reviews by CNSC staff, which make up roughly 75 per cent of compliance effort and include review of licensee documentation, operations reports, event reports, and responses to CNSC staff queries.

Roughly 25 per cent of compliance effort typically occurs on site, involving CNSC inspectors and often CNSC subject-matter experts. Inspections can be focused on one particular aspect of operations, for instance, a specific safety and control area, or they can be more general in nature. During 2020, much of the inspection effort was done remotely, due to the COVID-19 pandemic.

Before going further, CNSC staff wish to acknowledge that the sites covered by this ROR fall within the traditional and treaty territories of many Indigenous Nations and communities. In fact, the people who live near the active uranium mine and mill sites are predominantly Indigenous. There are 35 Indigenous Nations and communities who have indicated an interest in the sites covered by this ROR, and they are listed in Appendix N of the written CMD.

For all licensed sites, CNSC staff continue to engage with Indigenous Nations and communities about our work. We have actively informed interested Indigenous Nations and communities about this ROR and of the opportunity to participate in this

Commission proceeding. CNSC staff have listened to Indigenous feedback on the format and content of RORs in the past and will continue to do so going forward.

For instance, the inclusion of a plain language summary in this ROR is in response to a past request from Indigenous Nations and communities, and changes to the format and content of this presentation have been made in response to this year's intervention by the Curve Lake First Nation. Lastly, CNSC staff have recently posted to our website an infographic on the transport of radioactive substances in response to questions from the Ya'thi Néné Lands and Resources office at last year's ROR. This infographic shows the complementary responsibilities of the CNSC, Transport Canada, and the Province with respect to the transport of radioactive substances.

CNSC staff remain committed to building and maintaining long-term positive relationships with Indigenous Nations and communities.

CNSC staff now wish to update the Commission on the status of actions from the 2019 Uranium Mines and Mills ROR.

At that time, the Commission directed CNSC staff to

"continue working with the licensees to increase transparency and make relevant Preliminary Decommissioning Plans information available to the public."

CNSC staff can confirm that for all the active mine and mill sites, there is a publicly available summary of the preliminary decommissioning plan. CNSC staff will continue to encourage that licensees make public as much information about their operations as possible. Given that both Orano and Cameco are in compliance with CNSC regulatory requirements regarding preliminary decommissioning plans, CNSC staff propose that this action be closed.

The Commission also requested the CNSC staff intensify efforts to finalize agreements with the Saskatchewan Ministry of the Environment. CNSC staff have a long history of collaboration with relevant provincial agencies, including the Saskatchewan Ministry of the Environment, who are represented at this meeting today.

Regarding the action, the timeline for this work has been impacted by the COVID-19 pandemic. Both the CNSC and the Government of Saskatchewan intend to begin the revision of this memorandum of understanding in earnest in 2022. CNSC staff recommend the action remain open and will provide an update to the Commission at the time of next year's Uranium Mines and Mills ROR.

In March 2020, the COVID-19 pandemic began significantly affecting all aspects of the lives of Canadians. Throughout the pandemic and the transition to working from home, CNSC staff have continued to perform their duties, ensuring that persons and the environment are protected.

In 2020, the CNSC temporarily implemented a fully remote work model, where inspections and engagement events were held virtually. This was done to protect the health of all involved in these activities. Desktop reviews of licensee reports and submissions continued unchanged. Licensees put in place additional protective measures for their staff to permit their operations to continue.

Once proper protocols were in place, CNSC staff transitioned to a hybrid inspection model, where some in-field activities resumed, while others continued to be carried out remotely. Note that in-field inspections under the hybrid model still include some activities conducted remotely, and some CNSC staff participate remotely with their colleagues who are on site.

Consultation and engagement activities regarding sites covered by this ROR have continued to be conducted remotely to the present day. More details on the CNSC's response to the COVID-19 pandemic are presented in the written CMD.

I will now pass the presentation over to Mr. Devon Brown to describe CNSC activities at the active uranium mine and mill sites.

MR. BROWN: Good afternoon, President Velshi and Members of the Commission. My name is Devon Brown, and I am a project officer with the Uranium Mines and Mills Division at the CNSC.

I will begin by describing each of the five operating uranium mine and mill facilities.

These facilities are all located in the Athabasca Basin of Northern Saskatchewan.

Cameco operates the Cigar Lake mine, McArthur River mine, Rabbit Lake mine and mill, and the Key Lake mill.

Orano operates the McClean Lake mine and mill.

Three of these facilities -- Rabbit Lake, McArthur River, and Key Lake -- were in a state of care and maintenance throughout 2020, with all production suspended. CNSC compliance activities nonetheless continued at these sites in proportion to the activities at the sites.

Cameco's Cigar Lake operation is a high-grade uranium mine on the shore of Waterbury Lake. Uranium ore mined at the Cigar Lake operation is ground into ore slurry, loaded into containers, and shipped roughly 80 kilometres by truck to the McClean Lake mill.

For Cigar Lake, there were no *Licence Conditions Handbook* changes in 2020. Cameco's Cigar Lake operations licence was amended in 2020 to update

the financial guarantee. The licence was renewed in 2021 and is valid until June 30th, 2031.

CNSC staff conducted four inspections, one of which was on site, and the other three were remote, in 2020. Cigar Lake had one instance where a radiation protection action level was exceeded and no other reportable events. This action level exceedance is discussed later in the presentation.

Cameco's McArthur River mine is also a high-grade uranium mine. In 2018, Cameco placed this facility in a state of care and maintenance which has extended throughout the 2020 calendar year and continues to the present day. There were no licensing or *Licence Conditions Handbook* changes in 2020. The CNSC licence issued to Cameco for its McArthur River site is valid until October 31st, 2023.

CNSC staff remotely conducted three inspections. McArthur River has zero reportable events or action level exceedances.

Cameco's Rabbit Lake facility is located on the shores of Wollaston Lake and includes both a mine and a mill. Cameco placed this facility

in a state of care and maintenance in 2016, which has extended throughout the 2020 calendar year and continues to the present day.

There were no licensing or *Licence Conditions Handbook* changes in 2020. The CNSC-issued licence for Cameco's Rabbit Lake site is valid until October 31st, 2023.

Due to the care and maintenance phase, the Rabbit Lake in-pit tailings management facility continues to provide storage of solids produced by the mill water treatment system. Progressive site reclamation activities have also continued throughout the care and maintenance period.

CNSC staff conducted one remote inspection. Rabbit Lake had zero reportable events or action level exceedances.

Cameco's Key Lake mill processes uranium ore from the McArthur River mine into uranium ore concentrate. In 2018, Cameco placed this facility in a state of care and maintenance which has extended throughout the 2020 calendar year and continues to the present day.

The licence for Cameco's Key Lake operation was amended in July 2020 after the Commission accepted the revised amount of the financial guarantee for decommissioning. This is described in CMD 20-H101. The *Licence Conditions Handbook* was subsequently updated to reflect modern standard licence conditions and guidance. The Key Lake operation licence expires on October 31st, 2023.

CNSC staff conducted four inspections, one of which was on site, and three were remote. Key Lake had two reportable events, both of which were spills. These spills were addressed to the satisfaction of CNSC staff.

Orano's McClean Lake mill receives uranium ore slurry from Cameco's Cigar Lake mine and processes it into uranium ore concentrate. McClean Lake was operational throughout the 2020 calendar year.

There were no changes to the licence or *Licence Conditions Handbook* in 2020. In October 2021, a licence amendment hearing was held for the JEB Tailings Management Facility. The McClean Lake

operation licence expires on June 30th, 2027.

CNSC staff conducted four inspections, one of which was on site and three were remote. McClean Lake had six reportable events: four spills, one environmental protection action level exceedance, and one radiological action level exceedance. All reportable events were addressed by Orano to CNSC staff's satisfaction. The action level exceedances will be discussed later in the presentation.

I will now pass the presentation to Ms. Dana Pandolfi to describe the CNSC's activities at the historic and decommissioned sites.

MS. PANDOLFI: Good afternoon, President Velshi and Members of the Commission. My name is Dana Pandolfi and I am a senior project officer responsible for the Historic and Decommissioned Mine Sites.

Because these sites present a lower risk than the operating sites, they are included in every third regulatory oversight report. The Commission last received a report regarding these sites at the December 12th, 2018, Commission meeting.

Information was presented in CMD 18-M48, Regulatory Oversight Report of Uranium Mines, Mills, Historic and Decommissioned Sites in Canada: 2017.

Here we can see where the historic and decommissioned sites are located. There are 14 licensed sites spanning two provinces and one territory, namely the Northwest Territories, Saskatchewan, and Ontario.

Now I will present Gunnar and Lorado.

The Gunnar Legacy Uranium Mine and the former Lorado Mill are both managed by the Saskatchewan Research Council, SRC. The Gunnar remediation project is located on the north shore of Lake Athabasca, approximately 25 kilometres southwest of Uranium City.

Over the review period of 2018 to 2020, some of the major works included the completion of the placement of waste rock material at both Gunnar main and central tailings area and the construction of landfills A and B, which will contain both radioactive and hazardous wastes.

Due to the historic high water levels

in Lake Athabasca, the preparatory work for the Langley Bay remediation was postponed until water levels returned to normal. CNSC staff are awaiting the next steps regarding the remediation of Langley Bay tailings area.

The former Lorado mill site is located north of Lake Athabasca, approximately eight kilometres southwest of Uranium City. In 2020, an amended licence was issued to support the licensee's long-term objective of transferring the site into the Saskatchewan institutional control program.

We'll now move onto the presentation of the Madawaska and Dyno sites.

EWL Management Limited, or EWL, is the licensee for both the Madawaska and Dyno closed mine sites.

Madawaska closed mine site, a former uranium mine located near Bancroft, Ontario, operated from 1957 to 1982 and was decommissioned in the 1980s. In October 2020, the licensee submitted a licence application to renew their waste nuclear substance licence for a period of 15 years. The application was

renewed by a designated officer and the licence is now valid until July 31st, 2036.

In 2018 and '19, EWL continued rehabilitation/maintenance work on the two tailings management areas. In 2020, due to the restrictions in relation to the pandemic, EWL decided to postpone rehabilitation work at the site.

The Dyno closed mine site is located at Farrel Lake, approximately 30 kilometres southwest of Bancroft, Ontario. The mill circuit at Dyno operated between 1958 and 1960 and has since been demolished. The property consists of an abandoned sealed underground uranium mine, a tailings area, one dam with a toe berm, and various roadways.

The licence was renewed and issued by the CNSC designated officer on January 31st, 2019, and remains valid until January 31, 2034. These sites are expected to remain under the long-term monitoring and maintenance for the foreseeable future.

Moving on to the next slide is the Beaverlodge site.

Cameco Corporation is the licensee for

the decommissioned Beaverlodge uranium mine and mill site, which is located near Uranium City. Mining and milling activities began at the Beaverlodge site in 1952, and the mine closed in 1982. The Beaverlodge site consisted of a central mill, underground mines, open-pit mines, and a tailings management area, TMA. During the 2018 to 2020 period, there have been no significant changes to the site. There were three on-site inspections conducted during this reporting period.

On December 19th, 2019, the Commission granted an amendment to the CNSC licence to release 20 properties and released the Province of Saskatchewan from licensing obligations under the *Nuclear Safety and Control Act* for 19 properties. These 19 properties were transferred to the Saskatchewan institutional control program, ICP, for the long-term monitoring and management. One property was released from all government programs and monitoring as no follow-up activities was required. Properties which are transferred into the Saskatchewan's ICP must meet certain eligibility criteria.

There are currently 45 properties remaining within the CNSC-issued waste facility operating licence. Cameco has applied for a licence amendment to release an additional 18 into the Saskatchewan ICP. The Commission will consider this request at a hearing scheduled for March 2022 as outlined in CMD 22-H5. Cameco has stated that their intention is to have all Beaverlodge properties released from CNSC licensing and transferred into the ICP within the next five years.

For our next slide, I will present the site of Cluff Lake.

The decommissioned Cluff Lake uranium mine and mill is located approximately 75 kilometres south of Lake Athabasca and 30 kilometres east of the Saskatchewan/Alberta border. Owned and operated by Orano Canada Inc., or Orano, the Cluff Lake project operated from 1981 to 2002.

In July of 2019, the Commission issued Orano a licence renewal valid until July 31st, 2024. The licence renewal included removing from the licensed area sections that were not used for mining

and milling, allowing Orano to return the surface leases to the Province of Saskatchewan.

In February 2020, Orano submitted an application to transfer responsibility for the Cluff Lake property to the Province of Saskatchewan. This application is currently being reviewed by CNSC staff, and it is anticipated that Commission proceedings will be held on this application in 2022.

There was one on-site inspection conducted during this reporting period.

Our next slide will cover the two sites located in the Northwest Territories.

Crown-Indigenous Relations and Northern Affairs Canada is the licensee for both the Rayrock and Port Radium idle mine sites.

The Rayrock idle mine site was formerly a uranium mine and mill, and it is located in the Northwest Territories, 74 kilometres northwest from the community of Behchoko and 156 kilometres northwest of Yellowknife. The uranium mine and mill operated from 1957 until 1959, when the site was abandoned. The site was then decommissioned and

rehabilitated in 1996 by Indigenous and Northern Affairs Canada, now legally known as Crown-Indigenous Relations and Northern Affairs Canada, CIRNAC.

A CNSC designated officer issued a renewal of CIRNAC's waste nuclear substance licence which is valid until June 30th, 2027. In September 2020, CIRNAC submitted an application to amend their current licence in order to perform remediation work. CNSC staff reviewed the application and requested additional information from the licensee.

Port Radium idle mine is located in the Northwest Territories at Echo Bay, on the eastern Shores of the Great Bear Lake. The site was closed in 1982 after 50 years of operation and fully remediated in 2007 when the Government of Canada, through Indigenous and Northern Affairs Canada, now CIRNAC, became the licensee. During the review period, the licensee submitted a revised long-term monitoring plan which CNSC staff reviewed and provided comments and questions in 2018 and 2019.

The licensee is planning additional engagement activities with the Deline community and

leadership prior to finalizing the plan. Once a new plan is in place, CNSC Staff will amend the current licence to take into account the licensee's new legal name as well as incorporate new references into the *Licence Condition Handbook*.

The next few slides will cover the remaining decommissioned sites, all located in Ontario.

The Agnew Lake Tailings Management Facility is located about 25 kilometres northwest of Nairn Centre, Ontario. The uranium site was decommissioned and monitored by Kerr Addison Mines from 1983 to 1988. The site was then turned over to the Province of Ontario in the early 1990s.

In November 2018, the Ministry of Energy, Northern Development and Mines, now the Ministry of Northern Development, Mines, Natural Resources and Forestry, submitted an application to renew the current CNSC issued licence for a period of five years as well as amend their radioactive waste inventory to add approximately 20,000 cubic metres of niobium bearing material classified as naturally

occurring radioactive material (NORM) from the former Beaucage Mine near North Bay, Ontario.

On July 29th, 2020, the CNSC Designated Officer issued a licence which is now valid until July 31st, 2025. For the foreseeable future, the site is expected to remain under long-term monitoring and maintenance.

The Bicroft tailings storage facility, owned and operated by Barrick Gold Corporation, is located on the south side of Highway 118, approximately two kilometres west of Cardiff, Ontario.

In September 2020, the licensee submitted an application to renew their licence. In February 2021, a CNSC Designated Officer issued a renewed licence to Barrick Gold, valid until February 29, 2036.

Regular maintenance work was performed during the reporting period such as removal of vegetation from the dams as well as beaver cuttings from the spillways. In addition, the licensee ensured the long-term stability of the site by performing some upgrades to dams H

and I, thereby ensuring they meet the design requirements for potential events such as an earthquake.

For the foreseeable future, this site is expected remain under long-term monitoring and maintenance.

Rio Algom Limited is the owner and licensee of nine decommissioned uranium mines in the Elliot Lake area of northeastern Ontario. These mines include Stanleigh, Quirke, Panel, Spanish-American, Milliken, Lacnor, Nordic, Buckles and Pronto. Please note that a small error was made in the written CMD when listing these sites as described in the annex slide at the end of the presentation.

RAL’s performance in the environmental protection safety and control area was rated as "below expectations" for 2017 because of radium releases from the Stanleigh effluent treatment plant that exceeded the allowable limits specified in their licence. This exceedance was reported to the Commission in January 2018 as a status update. As a result, the CNSC issued an information request pursuant to subsection 12(2) of

the *General Nuclear Safety and Control Regulations*.

CNSC staff reviewed the licensee's submission and concluded in September 2018 that Rio Algom completed the requests by installing physical barriers to mitigate impacts, making improvements to the effluent treatment system through the addition of a preformed barite solution, and establishing that a project plan with effective timelines were in place to ensure that radium-226 concentrations remain within licence limits.

The Deloro mine site is located approximately 65 kilometres east of Peterborough, Ontario. This site began operation as an underground gold mine in the 1860s, and the historical mining, refining and manufacturing operation closed in 1961.

The Ministry of the Environment, Conservation and Parks (MECP) assumed the responsibility for the site and the required environmental cleanup when the previous owner abandoned the site.

Since the renewal in 2017, remediation of the Youngs Creek Area continued, contaminated

sediment was placed in geotextile containers that are in a containment cell and secured under an engineered cover, as shown in the figure.

In 2019, MECP submitted an application to request that the CNSC revoke the licence. CNSC Staff reviewed the application and determined that Youngs Creek Area no longer posed an unreasonable radiological risk to workers, the public and the environment.

CNSC Staff also verified that the licensee met the requirements for conditional clearance defined in the *Nuclear Substances and Radiation Devices Regulations*.

In August of 2019, the CNSC Designated Officer, pursuant to paragraph 37(2)(c) of the *Nuclear Safety and Control Act*, revoked MECP's waste nuclear substance licence for the Deloro mine site. CNSC Staff will no longer report to the Commission on the Delor mine site.

Denison Mines Inc. is the licensee for both the Denison and Stanrock mining facilities located in the Elliot Lake Area of northeastern

Ontario. Over the reporting period there were no licensing changes, both sites remained in stable condition and will remain in long-term care and maintenance.

I will now pass the presentation back to Mr. Devon Brown.

MR. BROWN: I will now summarize CNSC Staff's regulatory efforts for uranium mines and mill sites.

The total compliance verification effort for uranium mines and mills in 2020 was approximately 859 days, which is comparable to previous years, reflecting the operational status of the mines and mills, as well as licence renewals pending in 2021.

The total licensing effort for uranium mines and mills in 2020 was close to 439 days, which included drafting licences and *Licence Condition Handbooks* as well as preparing Commission Member Documents. This is slightly less than triple the effort of last year, which was 168 days, and reflects the number of licence renewals and other activities

that occurred in 2020.

CNSC Staff reviews the planned effort for compliance verification annually. The total number of inspections decreased from 20 in 2019 to 16 in 2020. With respect to Table 1-2 of the written CMD, the total number of inspections is shown as 17; however, one inspection was deferred, resulting in the number conducted being 16. The total number of non-compliances indicated
was 11, but the correct number is 14 as reflected in Table B-1.

All non-compliances raised as a result of inspection activities in 2020 were considered to be low risk and have been adequately addressed by the licensees, after an evaluation by CNSC Staff.

The total compliance verification effort for historic and decommissioned sites from 2018 to 2020 was approximately 966 days.

The total licensing effort for historic and decommissioned sites from 2018 to 2020 was close to 724 days.

The total number of inspections

conducted during this reporting period was 18. Note that there were some errors in the written CMD, but the data on this slide has been corrected.

All non-compliances raised as a result of inspection activities from 2018 to 2020 were considered to be low risk and have been adequately addressed by the licensee after an evaluation by CNSC Staff.

The presentation will now focus on CNSC Staff efforts reviewing licensee performance related to the uranium mines and mills.

CNSC Staff evaluate licensees' performance using safety and control areas. The 14 safety and control areas are common to all CNSC licensees, but the relative importance of each safety and control area is related to the type of operation being regulated.

Performance in a safety and control area is rated using set criteria such as key performance indicators,...

MS. McGEE: We appear to have lost the speaker. If it's possible to proceed with their

back-up.

Thank you.

MR. BURTON: Yeah, I will step in for Mr. Brown.

Performance in a safety and control area is rated using set criteria such as key performance indicators, compliance verification with licence conditions and events reported to the CNSC, including licensee actions in response to events as well as the nature of the events themselves.

CNSC Staff assign ratings to safety and control areas based on their professional judgement, expertise and information collected.

The rating methodology was presented in more detail as part of the written CMD.

The 2020 performance ratings for each of the 14 safety and control areas determined by CNSC Staff based on regulatory oversight activities are shown on this slide.

CNSC Staff’s review of key performance indicators resulted in a rating of "satisfactory" for all operating mines and mills.

The 2018 to 2020 performance ratings for each of the safety and control areas of Radiation Protection, Conventional Health and Safety, and Environmental Protection, as determined by CNSC Staff based on regulatory oversight activities, are shown on this slide. These safety and control areas are discussed here as they are the principal areas that apply to all historic and decommissioned sites.

CNSC Staff's review of key performance indicators resulted in a rating of "satisfactory" for all historic and decommissioned sites.

I see Mr. Brown is back with us, so I'll pass the presentation back to him.

MR. BROWN: Thank you, Patrick.

The primary sources of radiation exposure at uranium mines and mills comes from gamma radiation, long-lived radioactive dust, radon progeny and radon gas.

As part of routine and focused compliance verification activities, CNSC Staff verified that licensees have effective radiation protection programs and practices to monitor and

control radiological hazards. The five operating facilities all have the same action levels for nuclear energy workers of one mSv per week and five mSv per quarter for a given year.

In 2020 there were two radiation protection Action Level exceedances at operating mine and mill facilities, which will be discussed later in the presentation.

The historic and decommissioned sites do not typically have workers on site. Where there were workers, there were no action level exceedances for the reporting period of 2018 to 2020.

CNSC Staff concluded radiation doses were kept as low as reasonably achievable, and workers were being protected.

Regarding the estimated dose to the public, although uranium mine and mill operations are remote from local populations, they are required to calculate doses to the public as part of an Environmental Risk Assessment. CNSC Staff have reviewed these assessments and have confirmed that the doses to the public associated with the licensed

activities are a small fraction of the regulatory public dose limit of one mSv per year.

Here, we see here a graph of the average individual effective dose at the operating mines and mills for the past five years.

As the graphic clearly shows, average doses are well below the annual regulatory limit of 50 mSv and the five-year average regulatory limit of 20 mSv.

Here, we see a graph of the maximum individual effective dose at the operating mines and mills for the past five years.

As this graphic will clearly show, maximum individual doses are well below the annual regulatory limit of 50 mSv.

There were two events in 2020 at operating sites that resulted in the exceedance of weekly action levels.

In September 2020, Cameco reported that a worker had exceeded the weekly action level of one mSv. Cameco identified nine corrective actions as a result of this event. CNSC Staff reviewed the

corrective actions and are satisfied with the actions taken. This event was included as part of CNSC Staff's presentation to the Commission, CMD 21-H2.A, on Cameco's application for a licence renewal.

In November 2020, Orano reported that a worker had exceeded the weekly action level of one mSv. This event was attributed to exposure that occurred during dust-generating cleaning activities within a vessel in the water treatment plant. Orano identified two corrective actions as a result of this event. CNSC Staff reviewed the corrective actions and are satisfied with the actions taken.

Licensees are required to implement environmental protection programs. Action levels are established for contaminants in effluent to ensure early detection of potential problems in water treatment systems.

In 2020, all five operating uranium mine and mill sites reported annual average contaminant concentrations below Metal and Diamond Mining Effluent Regulations, and below licence discharge limits. In addition, contaminants were

below site-specific action levels, with the exception of the single action level exceedance at McClean Lake, discussed on the next slide.

From 2018 to 2020, all historic and decommissioned sites that released effluent were within regulatory limits.

Licensees are required to report to the CNSC and other regulatory authorities any unauthorized release of hazardous substances or nuclear materials.

There were six spills in 2020 at the operating sites. For each of these events, the licensee investigated the cause and implemented corrective actions to remediate and prevent a recurrence. CNSC Staff consider all six to be of low significance and are satisfied with the licensee's response and corrective actions.

Additionally, during the reporting period, CNSC Staff continued to follow up on a 2017 exceedance of the licence limit for radium in effluent at Elliot Lake, which was discussed previously in this presentation.

There is no impact to persons or the environment as a result of any of the events covered on this slide.

CNSC Staff’s compliance verification activities verified that the licensee's environmental protection programs were protective of the environment.

Orano reported one action level exceedance of selenium concentrations in the JEB water treatment plant effluent in March 2020. In response, CNSC Staff requested Orano to propose a long-term solution for the reduction in selenium loading to the environment.

Orano submitted an updated Selenium Adaptive Management Plan in September 2020.

Although this update provided details regarding continuous improvement techniques currently being implemented to reduce selenium releases in the interim, CNSC Staff asked Orano to verify that a long-term treatment solution is implemented. Orano expects this work to be completed by the first quarter of the 2022 calendar year.

Orano intends to continue releasing effluent that periodically exceeds the interim action level. Subsequent exceedances will be tracked and reported to the CNSC Staff in the quarterly and annual reports in conjunction with the corresponding reporting of selenium mass loadings.

This incident has had no measurable impact on the environment.

Here, we see here a graph of the average effluent discharge values for the primary four contaminants of potential concern that were released by each operating site during 2020.

As the graphic shows, average effluent discharge values for each of molybdenum, selenium, uranium and radium-226 were below their respective limits and action levels.

Here, we see graph of the maximum effluent discharge values for the primary four contaminants of potential concern that were released by each operating site during 2020. Action levels and limits for the Key Lake operation were used for this graphic as reference only.

As the graphic shows, maximum effluent discharge values for each of molybdenum, selenium, uranium and radium-226 were all below their respective objectives, limits and action levels.

Here we will discuss additional information regarding indigenous engagement and consultation.

CNSC Staff continue to meet with Indigenous Nations and communities to provide updates on regulatory oversight; however, due to the pandemic, this was conducted remotely in 2020. In October of 2021, CNSC Staff held a dedicated information session on the ROR for the Indigenous Nations and communities near operating mine and mill sites.

CNSC’s Regulatory Document-3.2.1, Public Information and Disclosure, sets out the CNSC requirements for effective communication with all members of the public. This Regulatory Document is applicable to the operating facilities, and CNSC Staff note that the public near operating mine and mill sites is predominantly Indigenous.

The primary goal of a licensee's

public information program is to ensure that information related to the health, safety and security of persons and the environment, and other issues associated with the life cycle of nuclear facilities are effectively communicated to the public.

CNSC Staff often participate in licensee community engagement activities to listen to the issues being raised by stakeholders and to provide information regarding the role and mandate of the CNSC.

Licensees have met public information requirements in the period covered by this ROR.

There were no Northern Saskatchewan Environmental Quality Committee meetings conducted in 2020 because of the COVI-19 pandemic.

CNSC Staff continued to work directly with Indigenous Nations and communities to identify opportunities for regular engagement throughout the life cycle of all CNSC regulated sites, including meetings and facilitated workshops as well as advancing long-term engagement opportunities. CNSC Staff also continue to provide advance notice of the

participant funding program opportunities for the annual RORs as well as any other participant funding program opportunities that may exist for upcoming regulatory licensed activities.

As a result of recommendations from the Commission, each fall CNSC Staff continue to hold an annual ROR meeting with Indigenous Nations and communities in northern Saskatchewan and Alberta. As previously mentioned, most of the engagement and consultation activities with Indigenous Nations -- sorry, with Indigenous Nations and communities in 2020 occurred via remote means due to public health recommendations related to COVID-19.

CNSC Staff continues to engage with Indigenous Nations and communities on the CNSC's Independent Environmental Monitoring Program (IEMP), including the work done at Elliot Lake and Deloro in 2018, Bancroft area mines in 2019, and Cigar Lake in 2020.

In addition, CNSC Staff held meetings in 2020 on the Canadian Uranium Workers Study and shared information on how to become involved in a

working group for the study.

CNSC Staff also attended in-person community tours alongside the licensee (Saskatchewan Research Council) with respect to the Gunnar and Lorado sites on SRC project CLEANS in the winters of 2018, 2019 and 2020 prior to the pandemic. CNSC Staff attended in-person community tours of the Beaverlodge properties in 2018 and 2019, as well as virtual tours in 2020.

CNSC Staff continue to encourage all current and prospective licensees to remain flexible and responsive to the requests and needs of the Indigenous Nations and communities that have an interest in their sites, facilities and proposed projects.

Here we will discuss other matters of regulatory interest.

All licensees are required to provide financial guarantees sufficient to fund all necessary decommissioning activities should the licensee not be able to fulfil its obligations. In the case of the Saskatchewan uranium mines and mills, the Province of

Saskatchewan is the beneficiary. The CNSC is the beneficiary for all other financial guarantees.

CNSC Staff confirm that all licensees covered by this ROR have valid financial guarantees in effect.

The CNSC implements an independent environmental monitoring program, IEMP, to independently verify that all persons in the environment around licensed nuclear facilities are protected. The IEMP is a regulatory tool that compliments and informs the CNSC's outgoing compliance verification program.

The IEMP does not rely on licensees to provide samples. CNSC Staff or independent contractors obtain samples from publicly accessible areas around nuclear facilities, then measure and report the amounts of radiological and hazardous substances present in these samples to the Commission and/or the public.

In August 2020 samples of fish, blueberries, Labrador tea, and surface water were collected in publicly-accessible areas in the vicinity

of Cameco's Cigar Lake operation. The surface water quality and fish chemistry were consistent with the results from Cameco's environmental monitoring program and indicate that the public and the environment in the vicinity of the Cigar Lake operation are protected and that there are no expected health impacts from the consumption of fish, water, blueberries and Labrador tea.

I will now pass the presentation back to Mr. Patrick Burton to present on the interventions.

MR. BURTON: This slide presents all the groups who submitted interventions for this ROR, and indicates which of those groups received participant funding.

CNSC Staff wish to thank all of the intervenors for having provided their input into this Commission proceeding.

Upon analysis of the interventions received, CNSC Staff have identified the following key themes. Many intervenors view the work of CNSC Staff in a positive light. There is an understanding of the CNSC's mandate to protect the health and safety of

persons in the environment.

Some intervenors raised concerns regarding how Indigenous Nations and communities were represented in all CNSC RORs, including the Uranium Mines and Mills ROR.

In response, changes in the CNSC's process for the production of Commission Member documents have been made and will be visible and documents produced after the receipt of that intervention.

Some intervenors expressed concerns regarding the effects of the Uranium Mines and Mills on the environment which surrounds those facilities, and CNSC Staff wish to reiterate that all available data indicates that the environment near Uranium Mines and Mills is safe.

Some intervenors have a desire for more participation in compliance and oversight at licensed facilities, a topic which is under consideration by CNSC Staff.

And lastly, some intervenors had questions regarding the impact of decommissioning

Uranium Mines and Milles in the past, the present and in the future. CNSC Staff continue to conclude that decommissioned sites are safe, that licensees who are performing decommissioning work are doing so safely and that licensees of active sites are planning adequately for eventual decommissioning.

I will now offer CNSC Staff's conclusions on the performance of all Uranium Mines and Mills licensees in the period covered by this ROR.

Based on our regulatory oversight work, CNSC Staff confirm that for the periods covered by this report all active, historic and decommissioned Uranium Mines and Mills had satisfactory performance overall, including: radiation protection measures that were effective in keeping doses as low as reasonably achievable; environmental protection programs that were effective at protecting the environment; and, effective conventional health and safety programs to protect workers and other persons on site.

CNSC Staff conclude that each regulated site operated safely, met licence conditions

and regulatory requirements, and respected Canada's international obligations.

With that, we thank you for your time, and we are available to respond to any questions that you may have.

THE PRESIDENT: Thank you very much for that presentation, CNSC Staff.

I would now like to give an opportunity to the licensees to provide any comments that they may have on Staff's regulatory oversight report and presentation. And we'll go through the same order as was in the Staff's presentation.

So we'll start with Cameco Corporation. Mr. Mooney you get the first shot at providing any comments please.

MR. MOONEY: Thank you. Good afternoon, President Velshi and Members of the Commission.

For the record, my name is Liam Mooney, I am the Vice-President of Safety, Health, Environment, Quality and Regulatory Relations for Cameco Corporation.

With me today is Kevin Nagy, the Director of Compliance and Licensing for our Uranium Mining and Milling Operations in Saskatchewan; Kristin Cuddington, our Manager of Community and Indigenous Engagement; and, Mike Webster, our Senior Reclammantion Specialist who directly oversees management of the decommissioned Beaverlodge property for Cameco.

We’re joining you today as part of your review of CNSC Staff’s 2020 Regulatory Oversight Report for Uranium Mines and Mills historic and decommissioned sites in Canada.

I want to start by emphasizing that Cameco’s highest priorities are the safety and health of our workers and the public, along with the protection of the environment.

Our consistent performance in these areas is demonstrated in the report that CNSC Staff is presenting today. We sustained our ratings on all safety and control areas in 2020 while responding appropriate to events at our operations.

Our record on conventional and

radiation safety, as well as environmental performance, is a product of our strong management systems and capable dedicated staff.

Cameco continues to manage operations during a challenging global uranium market. 2020 was our third full year with three of our Saskatchewan operations in a state of safe care and maintenance, and first year facing the challenges associated with the pandemic.

Throughout this period we've continued to manage our facilities in a safe manner and have maintained compliance to our regulatory requirements.

In our ongoing response to COVID-19, the safety of our workers, their families, and their communities has been Cameco's overriding priority. Initially, to develop a path forward we convened our corporate crisis management team and our operations activated their local business continuity plans.

We reduced the number of nonessential personnel at all our facilities and offices and temporarily suspended production at Cigar Lake twice in 2020. Employees who could work remotely from home

did so, while others continued to be compensated by Cameco.

We worked with public health authorities to develop and implement comprehensive exposure control protocols while we relied on our long-standing relationships in Northern Saskatchewan to understand and respond to the concerns raised by and needs of our communities.

COVID-19 has changed the way we work at Cameco. Workers are screened prior to any travel to our operation, physical distancing, masking, and enhanced cleaning and disinfection protocols were implemented in 2020 and continue today. With these measures in place, we safely resumed production at Cigar Lake as well as increased workers and activities at our other operations.

Working with the Province of Saskatchewan, we were able to obtain medical laboratory licences for COVID PCR testing at two of our operations. This testing capability allowed us to identify positive cases and isolate people to limit the potential for further transmission.

More recently, in 2021, we commenced rapid antigen screening on all incoming personnel, and effective November 15th of this year all workers, contractors and visitors to our Cameco facilities must be fully vaccinated.

To support this requirement, we have run a series of vaccination clinics at our healthcare centres. And with the help of the Health Authority, our nursing staff have administered approximately 600 doses to workers at our Northern Saskatchewan centres.

During these difficult times Cameco has continued to support our local communities. We created a $1 million COVID-19 relief fund which, to date, has helped 67 not-for-profit organizations across 40 communities.

We also shipped more than 1,200 care packages containing food and home essentials to Northern Saskatchewan households.

Looking forward, we will continue to work together with the Province of Saskatchewan and public health authorities, as well as dialogue with northern communities to ensure we have the right

measures in place to protect our people and communities.

With regard to engagement, we remain committed to informing our target audiences in Northern Saskatchewan in accordance with our approved public information programs and our own policies and procedures that reflect the various agreements we have with Indigenous and other communities.

Together, we have established a process for engagement under these collaboration agreements. Members have been appointed by five First Nations, five municipalities, and one Métis local who are signatories to these agreements, to represent their communities and steer engagement efforts with industry.

We meet throughout the year to discuss the operations and matters of importance to the respective communities. We discuss all aspects of our business on traditional territories from exploration activities to decommissioning.

Cameco also employs liaisons who are local members of our agreement communities. These

liaisons work to deliver on our northern strategy, namely workforce development, community engagement, environmental stewardship initiatives. They work closely with local leadership and more broadly to communicate with our community members.

We also continue to work with Northern Saskatchewan Environmental Quality Committee, which was established in the 1990s by the Province of Saskatchewan in accordance with a recommendation from the provincial and federal joint review panel.

Further, with the participation of local residents, the community-based environmental monitoring program, the Eastern Athabasca Regional Monitoring Program and the recent country food studies completed by the English River First Nation confirm that country foods continue to be safe and the water safe to drink.

As previously indicated to this Commission by Dr. Irvine, these country foods continue to be a safe and healthy dietary choice for residents of Northern Saskatchewan.

We are proud to be a part of these

programs and the role that Indigenous peoples have in their planning and implementation. In that regard, the Ya'thi Néné Land and Resource office provides technical support to the Athabasca Basin communities.

Recently, they have taken a more active role in the delivery of the community-based environmental monitoring program, starting with the 2021 program for Uranium City and Camsell Portage.

Cameco works to ensure that local communities benefit from the value the company places on economic development and social responsibility.

In 2020 Cameco procured 81 percent of our services from Northern Saskatchewan business and over $220 million was provided for business development, community investment, and workforce development initiatives.

Since 1990 we have commissioned province-wide public opinion surveys annually so we can gain a better understanding of public perceptions and opinions related to Uranium Mining in Northern Saskatchewan.

The surveys measure trends in public

support and continue to identify issues of interest. In 2020 survey results showed high levels of support for the continuation of Uranium Mining, with 83 per cent of respondents province-wide supporting our industry. This high level of support is consistent with the long-term trend.

We plan to see you next in March regarding a licence amendment request to release an additional 18 decommissioned Beaverlodge properties from licensing. These properties meet the established performance objectives and are therefore eligible for transfer into the Province of Saskatchewan's Institutional Control Program for long-term environmental stewardship.

Throughout the process to reach this goal, we followed our approved management framework and engaged with Indigenous and other interested groups in accordance with our public information program.

In closing, these are challenging times and I would like to thank CNSC Staff for their work in preparing this report for the Commission and

the intervenors for sharing their perspectives.

I would also like to thank the representatives of Northern Population Health who have taken time from their extremely busy schedules to be here with us today.

Our strong performance accompanied by your leading engagement practices contributes in no small way to the consistently high support for our operations that we enjoy in Saskatchewan.

We are available to respond to any questions that you might have for us.

THE PRESIDENT: Thank you, Mr. Mooney. I'll next move to Orano Canada Inc. and we've got Mr. Laniece. Over to you, Mr. Laniece for any comments you wish to make please.

MR. LANIECE: Thank you, Madam Chair, Members of the Commission. Good afternoon. My name is Vincent Laniece and I'm the Vice-President for Safety, Environment and Engineering for Orano Canada.

I'm joined by my colleagues here in Saskatoon, Tina Searcy, our Regulatory and Environmental Science Manager, as well as Glenn

Lafleur, Manager, Northern Affairs.

Thank you for inviting us today to participate in the CNSC Staff report on regulatory oversight for Uranium Mines and Mills. Orano operates the mechanic operation and we are joint venture partners on the McArthur River, Key Lake, and Cigar Lake operations. We operate the Cluff Lake decommissioning project, which is also included in this regulatory oversight report.

The regulatory oversight report speaks to our performance in 2020, which was a challenging year. With the COVID-19 pandemic operations were put in care and maintenance twice for almost six months in 2021. Through these changes Orano took measures to protect our employees, contractors, communities of which were operating nearby or from where our employees reside.

We have reviewed CNSC Staff's regulatory oversight report and find it accurately summarizes performance of the McClean Lake operation and the Cluff Lake project.

As is seen in the report, we continue

to provide satisfactory performance on health, safety, protection of the environment, while fully supporting our employees and communities on very challenging times. I fully echo what Liam was saying before.

Thank you, Madam Chair.

THE PRESIDENT: Thank you, Mr. Laniece.

We'll now move to licensees from other historic and decommissioned sites who are with us today.

And we'll start with Gunnar remediation project and the Lorado Mine site, and we've got representatives from the Saskatchewan Research Council, Mr. Merilees, over to you for any comments please.

MR. WILSON: For the record, my name is Ian Wilson, and greetings from Saskatchewan Research Council, President Velshi, Commission Members.

I'll be the spokesperson today for Saskatchewan Research Council. We don't have any comments at this time, but we are available to answer

any questions should they arise through this process.

Once again, thank you very much for inviting us to be here, and let us know if there's any questions. Thank you.

THE PRESIDENT: Thank you for being here, Mr. Wilson.

And let's move to the Rayrock mine and Port Radium group, and the Crown-Indigenous Relations and Northern Affairs Canada. I believe we've got Mr. Richardson.

Would you like to make any comments, Mr. Richardson?

MR. RICHARDSON: Good afternoon, President Velshi. This is Andrew Richardson from Crown-Indigenous Relations and Northern Affairs Canada.

We have no comments at this time, but we are available for any questions that you may have. Thank you for having us during this meeting.

THE PRESIDENT: Thank you for being here, Mr. Richardson.

For the Agnew Lake project, from the

Ministry of Northern Development, Mines, Natural Resources and Forestry. We've got Mr. Gimon or Mr. Cerilli? Over to you for any comments you wish to make.

MS. GIMON: My name is Juan Gimon, I'm the current Project Manager and Project Engineer for the site, Agnew Lake. And I'm joined by Mr. Stefano Cerilli, which was the previous Project Manager for the site.

And I don't have any comments at this moment, but if you have any questions feel free to ask.

THE PRESIDENT: Okay, thank you. Thank you for being here.

For the Bicroft Tailings, from Barrick Gold Corporation, I believe we've got either Ms. Brown or Mr. Brugger. Do you wish to make any comments?

MS. BROWN: Hi, good morning from British Columbia. Allison Brown here with Barrick.

No, no comments or questions from Barrick at this time. Thank you for having us.

THE PRESIDENT: Thank you for being

here, Ms. Brown.

For the Elliott Lake Historic Site, from Rio Algom, Mr. Lambert is here with us. If you wish to make any comments, Mr. Lambert?

MR. LAMBERT: Thank you, Madam Chair. For the record, my name is Anthony Lambert, I'm with Rio Algom.

We have no comments on the material presented, but we are here available for questions.

THE PRESIDENT: Thanks, Mr. Lambert.

And for the Deloro mine site, from the Ministry of the Environment, Conservation and Parks we've got Ms. Faaren. Do you wish to make any comments?

MS. FAAREN: Thank you very much. We are very happy you've invited us, thank you. We don't have any comments on the presentation and don't have anything to add, but we are here if you have any questions. Oh, and I should have said Kate Faaren for the Ministry of the Environment, Conservation and Parks.

THE PRESIDENT: Thanks for being here,

Ms. Faaren.

For Denison Mines and Stanrock, from the Denison Mines, we've got Ms. Martens. Do you wish to make any comments?

MS. MARTENS: Helly, President Velshi and Commission Members. Thanks for having us. I'm joined by my colleague Sarah who's the Manager of Environment. We do not have any comments at this time, but we're available for any questions should they arise.

THE PRESIDENT: Okay. Thank you for joining us today.

We'll now move to presentations from the intervenors. Before doing so over to you, Ms. McGee, for a few introductory remarks please.

MS. McGEE: Thank you, President Velshi. I'd like to remind intervenors appearing before the Commission today that we have allocated 10 minutes for each oral presentation and we would appreciate your assistance in helping us maintain that schedule.

Your detailed written submissions have

already been read by the Members and will be duly considered during this session today.

There will be time for questions from Commission Members after each presentation, and there is no time limit for that question period.

I will ask that once you've completed your presentation and the associated question period is over that you leave this Zoom session. You will be able to continue following the meeting via the live webcast on the CNSC website.

Thank you. President Velshi.

THE PRESIDENT: Thank you, Ms. McGee.

So the first presentation is from the Kineepik Métis Local and the Northern Village of Pinehouse, as outlined in CMDs 21-M34.2 and 21-M34.2A.

I understand that Mr. Natomagan and Mr. Smith will be presenting. I'll turn the floor over to you please.

CMD 21-M34.2/21-M34.2A

Oral presentation by the

Kineepik Métis Local and

Northern Village Of Pinehouse

MR. NATOMAGAN: Good afternoon. For the record, my name is Mike Natomagan. President Velshi and Members of the Commission, thank you for the opportunity to present this intervention from the Kineepik Métis Local and Northern Village of Pinehouse.

As part of the regulatory oversight report to the Canadian Nuclear Safety Commission, as a rights-bearing Indigenous community we considered a process to be a helpful tool for providing certainty that our land and environment concerns are important and are acted upon by our nuclear --

MS. McGEE: We appear to have, Mr. Natomagan, some background noise interfering with your presentation, but we can hear you.

MR. NATOMAGAN: Okay. Am I good to go again?

MS. McGEE: Please go ahead.

MR. NATOMAGAN: All right, thank you.

With companies looking for long-term and indefinite licences, our community appreciates this annual process to celebrate or adjust milestones with our industrial partnerships and this presence of the Commission.

Canada has started to implement UNDRIP and act upon the calls for action from the Truth and Reconciliation Commission. We, as an Indigenous community, will continue to understand our rights under Section 35 of the Canadian Constitution. We are requesting capacity to these regulatory processes.

Through an Indigenous perspective, we can also assist in the oversight.

--- Cree spoken / parole en cri

MR. NATOMAGAN: Pinehouse is located in the traditional territory of Kineepik Métis local. We have mapped our land activities extensively with 38,572 features representing 60 different land-use activities. As a community, we are actively rebuilding our Cree language and reawakening our

culture. Our long-term intention is to bring pride in who we are, Indigenous Woodland people, and removing the negative effects of colonization and systemic racism. We work with intentions and through consensus in our community by hosting weekly planning meetings and monthly strategy meetings.

We have realized the greatest gains with industry and agencies through formalized partnerships with identified targets for improvements. We signed a Collaboration Agreement with Cameco and Orano in 2012. This agreement supports our community in meeting basic needs such as managing addiction treatment, supporting our Elders, students, recreation and housing. In parallel, we are building industrial and commercial capacity organically in what we call a braided model. Through this we have created community-owned corporations for civil construction, residential construction and community governance.

This partnership has eased the burden of poverty. We also have the opportunity to develop our annual cultural calendar that promotes the use of our language and culture through immersion.

The parties to the Pinehouse Collaboration Agreement are Kineepik Métis Local, the Northern Village of Pinehouse, Cameco Corporation and Orano Canada.

We appreciate and understand the work that is completed by the CNSC. The data over the past 40 years of uranium activity has proven that in general the uranium operations operate safely and within the parameters of regulatory limits for any discharge. We are especially pleased with the human safety aspect and the current safety records for the uranium mining industry.

In contrast, we as a community measure health, wellness and opportunity. Our indicators are employment numbers and business opportunities. We study concepts like economic leakage and legacy while we determine the life of mines.

In our forty-year relationship, we succeeded in many levels of employment and are improving our business acumen. We have seen limited success in management and professional positions for the mining operations. We do not yet see any avenue

for a long-term legacy strategy for the mines and our community.

This is concerning as we move into the era of artificial intelligence and automation of processes. We know that the CNSC does not measure the social aspect for the mining operations. Can you imagine where our communities could be with the same level of emphasis on Indigenous rights as we place on safety and environment?

MR. SMITH: For the record, it's Walter Smith of Kineepik Métis Local of Pinehouse Lake.

In this era of reconciliation and UNDRIP, how does an engaged Indigenous community move into meaningful action? Pinehouse is currently at capacity navigating a dual cultural existence, one based on western conceptual expectations and one on Indigenous identity. It has been said that to succeed as a culturally intact Indigenous person, you have to be twice as good in comparison with a person who only practises western culture.

Here in Pinehouse we are within a

state of cultural revival. We are providing opportunities to reconnect with Indigenous identity through the Reclaiming Our Community (ROC) model. This model is in its 11th year and has created significant momentum in our community. The community engagement process is evolving into a community conscience and moving towards an organic beginning of self-governance. This must include concepts of regulatory licensing, community environmental monitoring, and the legacy effects of historical and current uranium mining operations.

As a community, this burden of practising two cultures is necessary and we work diligently in preserving who we are and who we have always been. When you consider the need for culture and language preservation for a small nation like the Indigenous people of Kineepik, we must be capable enough to understand federal and provincial laws in order to complete complicated applications for programs that affect the duty to consult and accommodation processes.

This CNSC ROR process with a mandate

of protecting our environment is in both the official languages. Yet, we must add the cost of interpreting this information into Cree for our Elders at our own cost. When one considers that the Cree language we speak is from here in Canada, Saskatchewan, Pinehouse and no place else, we wonder why there is not more support for the retention of this language. We do not feel valued as the same, perhaps even less than, when we work as a community through this reality, despite the colonial damage we have experienced.

We are only stating these issues here because as an agent of the government you may not hear them elsewhere. We understand that the ROR system currently does not consider these realities, but it should at the very least be aware of them.

To be honest, we are quite amazed at how much we have accomplished, and we are able to preserve and grow in our language and culture. We are also impressed at how well our community is doing despite the extreme historical challenges. Again, we credit this to partnerships with government, industry and a strong communication process with our community.

We absolutely appreciate the efforts beyond exploration and mining that our partners are doing. We expect to grow with our partners in time with the renewed interest in mining and exploration. We will not be passive in watching this activity occurring in our territories. We will work with intention to build capacity. We will work only in partnerships that are written with stated objectives and outcomes with realistic timelines.

This is our territory. It is digitally mapped. We use this land to offset the effects of colonization and institutional racism. We also use this land to maintain our identity as a people. This process of mapping came at a significant monetary cost to our community. This was necessary to be understood and heard by the agencies that effect activity on our territory.

With respect to our partnership with Cameco and Orano, we are pleased to say that we could not have arrived here without them. We have many businesses and many employment opportunities. We are formally partners and we communicate often and

effectively. We expect our relationship to grow in both capacity and professionally. We are informed in real time of any personnel, environmental or safety issues and we can react accordingly. Cameco may be a uranium mining company, but they have proven to us to be an agent of change for Indigenous populations here in Northern Saskatchewan.

We look forward to our future as we consider our role in providing clean energy to a world in need. We look forward to monitoring the environment and to developing a legacy for the future for this finite resource we call uranium.

Thank you.

THE PRESIDENT: Thank you very much, Mr. Natomagan and Mr. Smith, for your presentations and for those stunning set of slides.

Mr. Natomagan, I just wanted to confirm with you because part of your presentation was in the Cree language, did you translate it for us or close enough? I would have hated to have missed some of the things that you were talking about.

MR. NATOMAGAN: Yes, it's close

enough. A little bit of translation but a little bit of -- because, you know, for us with our language there is a lot of storytelling and I kind of addressed it to our community as well.

THE PRESIDENT: Thank you. So let me open the floor up for questions and we will start with Mr. Kahgee, please.

MEMBER KAHGEE: Good afternoon. Chi miigwetch for your presentation and bringing your voice to the process.

I have a couple of short follow-ups with CNSC staff.

The first is in relation to the concern with respect to ongoing capacity for participation and oversight. Have there been any discussions or consideration to expand that, for example, by including Indigenous communities in an environmental monitoring program?

And the second question has to do with what was just raised with respect to language. As we know, both UNDRIP, which the intervenor spoke to, and the Truth and Reconciliation Commission Calls to

Action spoke to the need to ensure that Indigenous communities are engaged in their language. I'm just wondering what efforts CNSC staff are making as part of the reconciliation efforts to ensure that Indigenous communities and nations are being engaged in their language? So those are the two questions I have. Miigwetch.

MR. BURTON: Patrick Burton, for the record. We will respond in the order that you asked.

I will start by saying that we do take into account Indigenous participation in our Independent Environmental Monitoring Program and I will ask Mr. Jeffrey Lam to add a little bit more surrounding that.

MR. LAM: Jeffrey Lam, for the record. I am an Environmental Program Officer at the CNSC.

So for all independent environmental monitoring programs that the CNSC carries out anywhere in Saskatchewan, we would send letters out to interested Indigenous groups and we would solicit their feedback. So for example for the Cigar Lake IEMP we sent letters out to all interested communities

and we incorporated -- any responses that we get we incorporate them into the final sampling plan. And once we have the results, we disseminate the information through our outreach events.

MR. BURTON: I will just add -- Patrick Burton again, for the record -- that the purpose of the Independent Environmental Monitoring Program really is to provide confidence to the public, and in the region surrounding these active mine sites in Saskatchewan the public is Indigenous communities. So it really does behoove us to reach out to those Indigenous communities to make sure that the samples that we are taking and the analysis that we are doing are significant to them. We could go do sampling that is significant to us and then it might be a miss as far as they are concerned and that would invalidate the exercise. So it really is a very important step for us as we are planning those activities.

I will ask Mr. Ryan Froess to speak to CNSC staff translating into Indigenous languages.

MR. FROESS: My name is Ryan Froess,

for the record, Senior Advisor Indigenous Relations, Stakeholder Relations Division.

Yes, CNSC staff are open to working -- we have had a great relationship in the past and continue to with the Kineepik Métis Local. So one of the things that we are interested in pursuing and was raised is an opportunity for the Cree language -- or to be translated into the Cree language. There are opportunities that we can discuss, an executive summary or something like that, if the community would be interested in getting that translated. If we were to visit a community and have a community meeting for example, we would have translators available to have those translations available to the community members so they can understand the topic that we are discussing.

We are interested in building trust with communities, so we are always looking for ways to improve on our relationship. If there is a possibility where Indigenous nations would like to involve Indigenous knowledge in our upcoming RORs or share that with us, we are always open to that and

looking forward to improve our relations.

THE PRESIDENT: Maybe I will ask Cameco and Orano to also comment around them making their materials available in different languages, or when you have meetings, do you make allowances for having interpreters?

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

I am going to ask Kristin Cuddington to talk to that in a little bit more detail, but I think that one of the things that stood out for me on this is a strong working relationship that we do enjoy with Pinehouse and the flexibility that we have seen, as Mr. Smith observed, is an agent to change in the North and we are open to dialogue around change and what we can do in that regard.

I think Kristin's group does a great job on making sure that the vehicles for communication are robust and in place.

MS. CUDDINGTON: Kristin Cuddington, for the record.

At Cameco we have developed overall

engagement principles. So these are guided -- or they guide what we do and were developed in conjunction with input from the North. These principles are open channels for communication. It's simple, we try to communicate in plain language, we build capacity for understanding, here the Elders include the youth. And to your point, the part that we try to deliver on is speak and hear the languages. So in order to meaningfully engage with people in Northern Saskatchewan, we try to speak in both of these languages and receive comments. As you saw, Mr. Natomagan spoke in his traditional language. So we provide simultaneous translations upon request. We translate our virtual materials into different languages. As well, our Cameco website we have overhauled and created a northern site which includes translations in both Cree and Dene. So folks are able to listen to the information so that they can be better informed. So these are some of the examples. So yes, we provide translations during our engagement.

THE PRESIDENT: Thanks very much, Ms. Cuddington.

Mr. Burton...?

MR. BURTON: Patrick Burton, for the record.

I'm sorry, I didn't mean to jump right in then, but perhaps after Orano has said their part we can come back to CNSC staff. We have just an additional piece to add on Indigenous languages.

THE PRESIDENT: Okay. Thank you. Okay.

Mr. Laniece, over to you.

MS. SEARCY: Hi. Actually Tina Searcy, for the record. I will field that for you quickly.

In addition to some of the items that Kristin covered on engagement principles, I just wanted to second that we do translate our plain language summaries of the documents that are provided to the public and we are translating video information, informational videos that we are sending out. We have done a lot of those during the pandemic in lieu of not being able to go to the communities, but those are translated, as are any interviews we do

on the radio. And if we do have the opportunity to be at a community meeting in a community, we bring translators with us.

I want to pass it over to Glenn Lafleur to see if he has anything to add.

MR. LAFLEUR: Yes. We do a lot of engaging in the communities. As a majority of Northern Saskatchewan is Cree and Métis, so with myself able to talk both Cree and Métis, I do a lot of the translation for the company. And then we also do videos and then we also rely on our community liaison workers in the Dene communities to do translation for us.

So it has been really a good opportunity for us. Even with our videos that we do and any other written material that we have, we translate it over to Métis, Cree and Dene. So I think we are doing a good job there and we will continue looking at different media programs that we can look at to help communication in Northern Saskatchewan.

THE PRESIDENT: Thank you very much for that.

Mr. Burton...?

MR. BURTON: Yes, thank you. Patrick Burton, for the record.

I would just like to ask Dr. Rachel Lane to speak a little bit about CNSC staff's work with Indigenous languages in the context of the Canadian Uranium Worker Study.

DR. LANE: Good afternoon. I am Rachel Lane, for the record.

The Canadian Uranium Worker Study has a working group which includes Indigenous community representatives. We have put out our very first fact sheet in English, French, Cree and Dene. We have put out a special article in the Ya'thi Néné Newsletter that has audio in Dene. We just had our last working group meeting just a couple of weeks ago and the working group commented how much they appreciated the work that we had done in the languages and we are going to continue to do so and actually expand that to radio and look into -- I believe the Métis Nation have a newsletter that we are going to reach out to. Thank you.

THE PRESIDENT: Thank you for sharing that, Dr. Lane.

Over to Ms. Maharaj then.

MEMBER MAHARAJ: Thank you, Madam Velshi, and thank you so much for the presentation, but I have no further questions.

THE PRESIDENT: Okay.

Dr. Berube...?

MEMBER BERUBE: Well, thank you for your visually stunning presentation.

I think I may have asked this question last year when you were presenting with us, but what is the size of your community again? It's somewhere around 2,000 people; is that correct?

MR. NATOMAGAN: We are roughly about 1,500 people.

MEMBER BERUBE: Right. And you said -- I think last year you said the majority of them actually worked in the mines and mills in the area. Is that true too?

MR. NATOMAGAN: Yes. Notoriously we are known to be in the mine sites, but the last few

years has been, you know, very, very tough times.

MEMBER BERUBE: Yes.

MR. NATOMAGAN: So we are hoping we can have our people back in those sites.

MEMBER BERUBE: Okay. So right now basically I guess everything is kind of quiet until COVID is actually complete and the mines are back up and running hopefully, I would think.

MR. NATOMAGAN: Yes, that is exactly it. We are hoping the mines will -- you know, we just have to learn to live with COVID and hopefully the mining will come back soon.

MEMBER BERUBE: Well, I have no further questions. Thank you for coming to speak with us because we really need to hear from you. It is really critical and important to us to hear. Thank you.

THE PRESIDENT: Thank you.

Dr. Lacroix...?

MEMBER LACROIX: Well, first of all, thank you very much for the presentation, I really appreciate it. No, my questions have already been

answered, so thank you very much once again.

THE PRESIDENT: Okay.

Dr. Demeter...?

MEMBER DEMETER: Yes, I want to thank you for sharing your presentation with us and providing us those beautiful pictures. Despite already having lunch, one of them made me very hungry. --- Laughter / Rires

MEMBER DEMETER: So I don't have any further questions, but having grown up in Saskatchewan, I connected with your presentation. Thank you very much.

THE PRESIDENT: Okay, thank you again. Thank you very, very much, Mr. Natomagan and Mr. Smith, for joining us today and sharing your perspectives. Very much appreciated. Thank you. [Aboriginal language / langue autochtone]

Okay. Our next presentation is from the English River First Nation, as outlined in CMD 21-M34.3. And I understand that Elder Isidore Campbell will offer a prayer prior to the presentation.

Elder Campbell, over to you, please.

CMD 21-M34.3

Oral presentation by the

English River First Nation

MS. CAMPBELL: I'm just going to unmute us here.

I'll just ask everybody, please rise where you are. Thank you.

ELDER CAMPBELL: I'll say a prayer as is our custom at English River, the way we're taught, and to be thankful for where we are and also the importance of today's meeting.

--- Dënësųłinë´spoken / parole en chipewyan

MS. CAMPBELL: Thank you.

ELDER CAMPBELL: Thank you very much. My name is Isidore Campbell, for the record. I'm the elder for the English River Business Development here at Grasswood. And thank you to President Velshi.

I would first like to acknowledge and welcome the elders who are present in the room with me

as well as those that are connected to us virtually. Secondly, I would like to also acknowledge that we are gathered in Treaty 6 territory, the traditional territory of the Cree, Dene, Dakota, Lakota, Nakota, and Saulteaux peoples.

I would like to thank President Velshi and the Canadian Nuclear Safety Commission for allowing us to speak on behalf of English River First Nation regarding the 2020 regulatory oversight report.

The English River First Nation is a strong Cree and Dene community. We are guardians of our ancestral territory. We are stewards of the land. Our people have been living off the land for generations. The land sustains us, and we will continue to protect these lands for as long as we are here.

With that, I will pass the microphone to Cheyenna Campbell, Lands and Resources manager for the English River First Nation.

MS. CAMPBELL: Thank you, Elder Campbell.

For the record, my name is Cheyenna

Campbell. I am the Lands and Resources manager for English River First Nation.

Before I begin, I would like to acknowledge the elders gathered here in this room with me as well as those virtually.

I'm here today in English River First Nation Grasswood Reserve with Elder Norman Wolverine, with Elder Isidore Campbell, with our counsellor and lands representative Irene Apesis, and way in the back there we've got our scientific consultant, the stellar Ms. Robin Kusch.

Our chief sadly sends his regrets today.

I'd like to thank Elder Campbell for his prayer today and I'd also like to share a small teaching with you. When I was a kid, I noticed that any gathering of our people in our community would always begin with a prayer. And that prayer came in different forms. Sometimes it was the Lord's Prayer; sometimes it was a prayer said in Cree or Dene; and sometimes it was simply the serenity prayer.

So I asked my granddad, when I speak

to him frequently at our CNSC hearings, "Why do we pray before everything?" You know, "And why is it different all the time?"

And with the patience that only a grandparent has, he said, "You know, Cheyenna, we pray when we gather to thank our Creator for allowing us to live another day, to give thanks for the air that we breathe, the food we eat, and the people that we're gathered with. And the prayers are all different because it doesn't matter how you pray, it matters that you pray. Every prayer is making a phone call to our Creator. It doesn't matter the phone number you use. You're all calling the same place," he used to tell me.

And as I got older and started attending community meetings and as a professional in this capacity, I said, "I understand why we pray when we get together. But why do we have to pray at the beginning of meetings too?"

And again, with the patience only a grandparent can muster, he said, "We pray to give thanks to our Creator for another day. We pray to

give thanks for safe travels of all those who are gathered with us in the meeting. And we pray to make that meeting ceremony. That way, people know to be respectful, to speak truth, to be honourable, and to conduct oneself with the reverence for the process, and to remind us to be humble."

Now, I know it's commonplace now for Indigenous communities and Indigenous people participating in hearings like this one at the Commission, it's customary to offer prayer or allow us to offer prayer. However, it's not commonplace to share why we request that. And it may not be the teaching for every community, but certainly those are the teachings and the reasons as to why we have been brought up to prayer before a meeting: to make it ceremony.

So let's continue our meeting with truthful words, with mutual respect, and with humble reverence.

I'll begin with a bit of the history of English River First Nation. And I bring this up at every hearing, because I believe it is a very

important context to frame the statements that the English River First Nation makes and the reasons why we participate.

Now, we have 19 different reserves in our Nation, the main settlements being at Patuanak and La Plonge. However, these are not our ancestral historical settlements.

Patuanak was settled by the North West Company, the Hudson Bay Company along with the Catholic Church. A residential school was established at the La Plonge Reserve by the federal government and the Catholic Church as well. And they said, Hey, everybody who belongs to English River First Nation, this is your new home. We're building houses here. We've got the Hudson Bay Company here for you, and we've got a church here for you.

Now, these settlements eventually became the main reserves where people who live on reserve live now, and they were not allowed to leave that reserve without permission from the Indian agent.

Now, long before colonization, we travelled. We roamed throughout Saskatchewan. We

moved from one settlement to the other, following the seasons, the migration, the animals as they moved, the fishing sites, the seasonal berry and medicine harvesting areas. And the heart of this migration area in our ancestral territory, as I keep saying, is Cree Lake.

Now, Treaty 10 was signed by our chief, William Apesis, on August 28th, 1906. And as per the treaty, the Canadian government allocated a certain amount of land to the people of the ERFN, English River First Nation, to become our Reserve property. Now, this land was at Patuanak and La Plonge. However, ERFN was shorted an amount of land that we were entitled to under the *Indian Act*. So in 1992, under the Treaty Land Entitlement Process, English River began to purchase lands along our traditional territories and our migration routes and our historic settlements.

Now, my point is to say that ERFN Reserve lands and many other Nations out there now, after the TLE process, are more reflective of our historical and our modern traditional usages.

Now, on turning to the ROR itself, on October 8th of 2021, the people in this room and others from English River First Nation participated in the CNSC annual Indigenous virtual engagement session. And it allowed us to receive a preview of the CNSC report that we're discussing here today. It gave us concise, clear information regarding the uranium mines and mills, and the digital session encouraged conversation and questions in an environment without the presence of licensees, which helped to enable us to give a more unrestrained exchange of opinion.

Now, ERFN considers this actual engagement of the Aboriginal -- and sorry, Indigenous virtual engagement session invaluable and a good example of open and effective Indigenous engagement with the CNSC. The evolution that we have been part of since 2017 is appreciated and does exhibit that the CNSC values our relationship and the opinions of our people who sit on those lakes.

Now, in addition to attending the CNSC virtual engagement session, we were able to review the ROR with the help of our -- the mighty Robin Kusch.

And after reviewing it, we see that the CNSC has completed the report and concluded that adequate protections are in place to protect the environment and humans during operation and closure/decommissioning activities.

Now, the ROR is of great importance to us as many of the uranium operations, mines, mills are located within our English River First Nation territory. The people of the ERFN, as Elder Campbell said, have existed here for generations, thousands and thousands of years. We have fished. We have hunted. We have gathered berries. We have lived here, and it's our inherent right to continue to do so.

Now, Mrs. Kusch has enabled English River to review and understand the technical information contained within the ROR. And she's also helped us to outline some questions for Orano and Cameco. And these questions are posed to both Orano and Cameco prior to this engagement hearing here today. They've all answered the questions and provided clarification that we requested. And ERFN has also engaged with Cameco prior to this hearing and

have also had our questions posed to them returned and provided clarification as we requested. And so ERFN is wholly satisfied with the answers and level of engagement provided by both Orano and Cameco.

After a review of all documentation, after speaking with engaged community members and after our virtual Aboriginal engagement session, ERFN has no reason to object to the CNSC's conclusions that the sites are being managed effectively in terms of the safety and control areas.

Finally, I'd like to thank the CNSC, the licensees, and the Commission Members for allowing English River First Nation to intervene on the ROR this year.

And I turn it back to you, Madam. Thank you.

THE PRESIDENT: Thank you very much, Elder Campbell, for the prayer. And thank you, Ms. Campbell, for sharing with us a little bit behind the significance of the prayers, which is extremely powerful and frankly really resonates with me, because in my culture too I don't do anything without starting

a prayer. Every morsel in my mouth proceeds with a prayer. So thank you for sharing that with us and for your written submission as well, a very thoughtful submission as well. So thank you.

And with that, let me open the floor for questions from Commission Members. And we'll start with Ms. Maharaj, please.

MEMBER MAHARAJ: Thank you, Madam Velshi.

And as well, thank you, Elder Campbell and Ms. Campbell. I too resonate with Madam Velshi's comments, coming from a culture that does indeed centre itself on its relationship with its Creator, its God.

Toward that end, I have one question I would like to ask of the English River First Nation representatives. In your submission, you've identified, as has the operators, a release of selenium that exceeded the action levels. And at page 7 of your submission, you've identified the responses that the CNSC and that Orano has undertaken in order to address that particular exceedance.

I have some question for the operator, but for the English River First Nation particularly, I'd like to ask whether you're satisfied with the response to the exceedance, and if you are comfortable with the information that you've received in this regard.

MS. CAMPBELL: Thank you. Cheyenna Campbell, for the record.

I think this kind of goes back to Mr. Kahgee's questions earlier to the Métis local. Cameco and Orano provide us with executive summaries when we have issues with exceedances. They give us documents that are in more simplified language, that are easier to translate. And then we're able to take those documents -- and this is one of those situations -- we take those documents and we orally translate them into Cree and Dene and broadcast them on our local radio stations.

The reason we do that is because they are inherently oral languages. There's very few people who read syllabics or Roman orthography in Cree and Dene. So we actually prefer to do our own oral

translation. And in this case, yes, that did happen.

And keep in mind, we do like to do our own translation simply because there are many dialects of Cree and Dene that happen and change in between very small distances. The colloquialisms in themselves can make such a difference in the way you say something and the meaning when you translate from English.

And so yes, we do ask for simplified documentation after any kind of exceedance or issue has come up. We deal with it within the processes that are outlined in our collaboration agreements with our environmental protection groups, and we discuss them. And we have the licensees provide us with an executive summary that we can then orally translate and get the message out to that guy on the lake.

MEMBER MAHARAJ: Thank you.

Madam Velshi, did you want me to follow up with my question to the operators now or at the end?

THE PRESIDENT: Do it now.

MEMBER MAHARAJ: Okay, perfect.

THE PRESIDENT: Please, do it now.

MEMBER MAHARAJ: So there's one piece of this particular incident that causes me a question, and that is where it states that Orano intends to continue to release effluent that periodically exceeds the action level. I'm wondering if the operator can explain that choice.

THE PRESIDENT: Mr. Laniece?

MR. LANIECE: Vincent Laniece, for the record.

Yeah, thanks for this question. And it's not an easy one to answer because right now we're doing very fine with our selenium release to the environment. And I'm very glad about that. And we're putting in place some additional means in order to further control the selenium that we are discharging to the environment.

Everybody knows at this point in time that the selenium in too much quantities to the environment has some damaging effect, especially on certain species of fishes. So that's not where we want to be, for sure.

At the same time, the sensitivity to this fish population is mostly driven by the accumulation of selenium in the sediments, and then from the sediments to the fish habitat. A spike, I would say, or just an increase, a very temporary increase of a concentration of element into the effluent does not translate with an accumulation of selenium into the fish habitat that could be damaging to these fishes. So that's the why, effectively.

We're doing everything we can, of course, to limit the loadings and limit the concentrations to the approved levels. But at the same time, if we're getting a spike in the concentration, this is not potentially meaningfully harmful to the fish habitat.

So I hope this provides a bit of clarity to our response.

MEMBER MAHARAJ: A little bit. One short follow-up question: How long does the selenium remain either in the fish tissue or in the sediment after a spike? What risk of bioaccumulation does Orano have to deal with, with respect to selenium

discharges?

MS. SEARCY: I can assist you for the record. I'm going to address that a little bit.

So just to start with that first, our action levels are set just to help us tweak operational settings within the mill. And it's -- our action level is set significantly below discharge limits that remain protective of the environment. So that's something that's really important to note. The action and admin levels that we have in place are to help us guide our operations.

And unfortunately, with selenium, we were experiencing some upsets where we were making some changes to the water treatment plant. So they were directly related to in that period in 2020 a very short period of time where we knew we were going to be slightly above our action limit while we made some changes to the water treatment plant.

As far as the correlation between those three small spikes above our action limit and how long they stay in the environment with the loadings, I don't have those numbers with you right

now, but we have been doing environmental risk assessments on our receiving environment, and to date, we don't see any impacts from selenium loadings.

We are forecasting the increasing trends that could potentially cause problems in the future, and Orano has put out a significant amount of effort to ensure that this does not happen through mitigation measures within our tailings management facility and our water treatment plants. And in the quarter one of 2022, we'll be making a significant change to the water treatment plant to prevent these spikes from occurring again.

Hope that helps a little bit.

MEMBER MAHARAJ: Yes. Yes, it does. Thank you very much.

MS. SEARCY: Thank you.

THE PRESIDENT: Thank you.

Dr. Berube?

MEMBER BERUBE: Yes, thank you for your presentation, and I agree with everyone that every day is a blessing. And matter of fact, I get up that way every morning myself, and I will until my

last day, I guess, so I'll leave it there.

One of the questions I have for English River First Nation is could you give us some understanding of how many of your families actually rely heavily on harvesting activities to put food on the table on a daily basis? It's one of the difficult things to gauge. But because you're really connected, you may have a better sense of this, and because it would help us understand how really important it is to really monitor this thing and to caretake it as much as possible.

MS. CAMPBELL: Cheyenne Campbell, for the record. Thank you for your question, Mr. Berube.

We're a northern Saskatchewan community. It's not like being an indigenous community in southern Ontario. We have a lot of Crown land and indigenous land here to continue to hunt and practise our traditional way of life. And it's not that you have to travel very far. It's down the road in the community or it's along those traditional paths that our community members have used for generations.

So in my freezer right now -- and I'm

an urban member. I mean, I've probably got 25 percent of my freezer full of moose and fish.

In the north, because it is a more secluded area, the cost of food is quite significant and our community members have the ability to go out and shoot ducks and -- you know, and trap rabbit and set nets for fish and hunt moose in preparation for the year and along the year, when harvesting is right for those different meats as well as for berries and medicines we do all year round.

And I would say it supplements our diet, especially the meats itself, to about 60 to 75 percent, I think. Does that sound about right?

Sixty (60) to 75 percent of our diet is extremely lean meats, mostly moose and caribou and fish.

So it's a traditional way of life that our family members, that our community members hold dear to us, so much so that for an entire month of September our community shuts down and we go to Kilometre 160 of the Highway 914 to the Key Lake Mine from our community.

We shut down and we all go to this culture camp where our younger people are taught to live off the land for a month long. And due to COVID, we've actually stretched that into August, September and October so we can have smaller groups.

So it's not just something of historic passing. It's from Elder Campbell and Elder Wolverine's generation down to my generation down to my children's generation, and it's ongoing.

I hope that answers your question.

MEMBER BERUBE: Well, thank you very much for that. Actually, I grew up on fish and moose myself, so I fully appreciate walking out the back door and finding dinner.

So I just want to touch on the selenium issue here with Orano because, simply, it's kind of in the report. It sort of sticks out as the one thing that needs to be looked at a little bit harder.

And just if Orano would, would you give me some understanding of what you're doing to your actual processes to actually get rid of the

selenium concentration or reduce the selenium concentration?

You're talking about adding to your processes something to actually filter it out, chemically treat it. I'm not sure how you're going to remove it. But can you give us some idea how you intend to moderate that?

MR. LANIECE: Vincent Laniece, for the record.

Thank you, Dr. Berube, for this question.

Yes -- and I can start getting into the overall chemical process. The selenium that we've got difficulty to treat is the selenium that is the most oxidized coming out from our circuit, so that's the selenium to the valance of plus 6. That's the one that doesn't precipitate. In our process, it's just the addition of mostly ferric sulfate.

So we have studied a number of different techniques in order to get to precipitate. Not get rid, but precipitate the selenium +6, and we ended up on finding effectively the sweet spot with

region that is called ferrous sulfate, which is different than ferric sulfate because the ferrous doesn't add the same oxidation state as the ferric. And modifications that we're currently implementing in our water treatment plant is based on implementing this ferrous treatment that will effectively help precipitate the selenium +6 that is accumulated in the water of the tailings management facility. And when it's precipitated, then it will be transferred again to the tailing authorization circuit. It will not reoxidize because it's already precipitated for the selenium, so the selenium will stay at the middle valance, mostly, and then being stable and safe for the very long future into the tailings management facility.

So I hope this answers your question.

This technique is readily -- it's available. It's not research and development type of technique. It's available in the chemical books.

It's very well suited with the operations that we do have because it's just based on changes of pH and chemistry. An additional reagent,

for sure, that we need to implement at site, but it will -- it will not be a revolution for our operators and will effectively help us into achieving reducing the selenium loadings to the environment.

So I hope that this responds to your question and provide confidence that, yes, we will succeed into harnessing this selenium challenge, which we want.

MEMBER BERUBE: That's exactly what I need to hear. Thank you.

THE PRESIDENT: Dr. Lacroix.

MEMBER LACROIX: Well, first of all, thank you very much, Elder Campbell and Ms. Campbell, for your presentation. Thank you for the prayer. I appreciate.

I also appreciate the fact that you asked us to stand up because it's good for my knees and the prayer was good for my soul. Thank you very much.

And now I would like to move on to molybdenum instead of selenium. You've raised a very interesting issue in your submission, and this is with

regards to McArthur River operations. And the question that is raised by English River First Nation is that -- is the fact that the molybdenum concentration in the treated effluents have been reduced by 90 percent is due to the state of care and maintenance or is it attributed to the corrective actions that were implemented in 2018?

So this is a question for the operators.

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

That issue primarily relates to molybdenum was identified through some risk assessment work that we had done in the early 2000s and we had evaluated treatment options, treatment technology upgrades and process improvements during the 2005 to 2009 period of time and we've optimized the removal efficiencies in the treated mine water as well as put in some administrative controls, so that reduction was largely achieved in the -- by about 2009 with some ongoing optimization that occurred.

So it's been a success story, no

doubt, and I appreciate you raising it, but it's one that is -- while we still look for opportunities to improve our effluent, the significant improvements that were made, were made in the 2009 to 2010 category -- timeframe by the time it was all done.

MEMBER LACROIX: Okay. Thank you very much. I understand.

THE PRESIDENT: Dr. Demeter.

MEMBER DEMETER: Thank you for your presentation.

And my first question has been answered with Ms. Campbell talking about getting responses back from Orano and Cameco, which is very good.

I think I just want to make an observation to put a finer point on the selenium issue.

I gather that the Beaver Lodge fish consumption advisory is due to elevated selenium largely based on past mining and milling activities at the Beaver Lodge site and milling by the nearby Laredo site.

For what period of time is that advisory expected to last? Is this a perpetual thing, like once it's in the environment it's persistent and that will be there forever or is there a timeline for this advisory based on environmental monitoring and trending?

I'm not sure who best to answer that question, whether it's industry or --

MR. MOONEY: We could start --

MEMBER DEMETER: Sure.

MR. MOONEY: -- Dr. Demeter, on that.

The management and implementation of the healthy fish consumption guideline is at the discretion of the Medical Health Officer for the region, so we don't control that, but I would ask Kevin Nagy to talk a little bit about what it means in that environment and how it's been in place and how effectively Cameco's continued to improve the receiving environment in the vicinity of the Beaver Lodge properties.

MR. NAGY: Thanks, Liam.

Good afternoon, everyone. For the

record, my name is Kevin Nagy.

Maybe I'll start in my response by speaking about the country food study that was done for the Uranium City area and the Beaver Lodge area while we were implementing our path forward plan during the previous licence term.

So the food study that we did included extensive interviews with residents of Uranium City and resource users on where they were obtaining their country foods, including fish. And what we found was the vast majority of residents of Uranium City and the area predominantly obtain their fish from Lake Athabasca, and not necessarily from the Beaver Lodge properties or the lakes immediately downstream of the Beaver Lodge properties.

The fish advisory that is in place for Beaver Lodge Lake and downstream Martin and Cinch Lakes is a healthy fish advisory, so there is an amount of food, several servings a month, that can be safely consumed by individuals as part of a healthy diet.

As Liam mentioned, the ongoing, I

guess, effectiveness of the healthy fish advisory is at the discretion of the Northern Health Authority. We continue to monitor the environmental conditions on and downstream of the properties and report on those, and the environmental risk assessments that we do using that data continually shows that the downstream environment and human health is protected.

When we did assess the potential remedial options that could be employed on the decommissioned properties to advance, hasten the timelines associated with a natural recovery which is occurring, and monitoring shows that it is occurring, there weren't very many options that would have a meaningful impact on that, so the quantity of selenium in the water in Beaver Lodge Lake is expected to improve over time, but that timeframe is, you know, hundreds of years rather than something that would happen right away.

Thank you.

MEMBER DEMETER: Thank you for that.

I just wanted to point that out as an example of the accountability and responsibility the

industry and the regulatory oversight has to not -- that this is an example of where we don't want to be with selenium, so it highlights how -- you know, I know there's historic issues, but we've got activities that are not historic. They're here now. And this is an example where things could go wrong, so I just wanted to highlight that.

THE PRESIDENT: And I see Dr. Irvine's got his hand up.

Dr. Irvine, over to you, please.

DR. IRVINE: Thank you very much.

So James Irvine, for the record. Good afternoon, President Velshi and Commission Members.

I certainly appreciated English River's discussion about selenium and the question about the impact on human health and what is involved with selenium concerns in modern times.

As we do -- as Mr. Nagy mentioned, we do have a fish advisory jointly released by the -- our health authority as well as Ministry of Environment because of the levels of selenium there and we purposely have called it a healthy foods consumption

guideline because people can eat fish from Beaver Lodge Lake and from Martin Lake as long as it's not all of their fish.

And as they mentioned, the food consumption survey shows that people eat from a variety of sites throughout the Uranium City area, so the advisory is really a limitation on the amount of fish that's consumed from that site.

With that -- with those lessons learned over decades and in Beaver Lodge, I think this really points that importance of what's going on with sediment monitoring, water monitoring and fish monitoring.

Certainly back in 2004-2005, Elder Norman Wolverine and I were having the same discussion back then about selenium and fish, and it was good that sediment and water end up being early warning signs for impact that could occur in the future in fish, which is a warning sign to risk to humans.

So that's where I think it's so important to respond, as has occurred in the Key Lake site as well as the McClean site, of using sediment in

water to make changes early based on predictive modelling rather than waiting impact on fish or impact on human health.

So I think that's reflective of the importance in the modern sites that when we compare some of the values in fish through the independent monitoring program in a place like McClean, those values in the fish at the exposed sites are sometimes even lower than they are at the reference sites or background sites.

And as well, the values of selenium in fish close to the mine site are actually, in some cases, lower than pork chops, chicken, canned tuna, canned salmon, eggs that you could buy in your grocery store.

So I think it shows that there's certainly safety in the country foods around modern mines and around Uranium City other than taking those precautions in terms of the overall amount of fish that one consumes.

Thank you.

THE PRESIDENT: Thank you, Dr. Irvine.

Always great to hear your perspective.

Let's move to Mr. Kahgee, please.

MEMBER KAHGEE: Thank you, Madam President.

I don't have any questions other than I'll say chii miigwech to our elder for sharing with us. Thank you to English River First Nation for reminding us of the importance of your relationship to the land and to safeguard that relationship.

THE PRESIDENT: Thank you.

So with that, let me again thank the English River First Nation for your submission, your presentation, your appearance today and setting just the absolutely right tone for this meeting. Greatly appreciate that, Elder Campbell and Ms. Campbell, for being here.

Thank you.

With that, we shall take a break and we shall resume at 4:35 p.m. Eastern Standard Time.

Thank you.

--- Upon recessing at 4:18 p.m. /

Suspension à 16 h 18

--- Upon resuming at 4:35 p.m. /

Reprise à 16 h 35

THE PRESIDENT: Welcome back, and let's resume with our oral presentations.

Our next presentation is from the Ya'thi Néné Land and Resource Office, as outlined in CMDs 21-M34.8 and 21-M34.8A.

I understand that we have Mr. Schmidt, Ms. Denechezhe and Mr. Sayn who will be making the presentation. So I'll turn the floor over to you.

CMD 21-M34.8/21-M34.8A

Oral presentation by the

Ya'thi Néné Land And Resource Office

MR. SCHMIDT: Thank you, President Velshi and Commission Members. For the record, my name is Garrett Schmidt, I'm the Executive Director for the Ya'thi Néné Land and Resource Office.

Ya'thi Néné Land and Resource is mandated by the seven Athabasca Basin communities to protect the land and the water of Nuhenéné, which is a traditional territory of the Athabasca Denesuline First Nation.

With me in our Saskatoon office is Board of Director Christopher Toutsaint from Fond du Lac Denesuline First Nation, and Environmental Land Use Planner, Shea Shirley. Also on the call is Mary Denechezhe, who is Ya'thi Nene's Chairperson, and a Director for Hatchet Lake Denesuline First Nation. As well we have Al Sayn from Stoney Rapids, who is Ya'thi Nene's Secretary and Director for the Permanent Resident Organization.

We thank the CNSC for the opportunity to present. And I'd also like to thank Kineepik Métis Local, as well as English River First Nation for their presentations. In particular, thank you to the Elder for providing that opening prayer.

Chris and I will be presenting today on behalf of the basin communities and I'll pass it over to Chris.

MR. TOUTSAINT: For the record, my name is Chris Toutsaint.

Review of the ROR, the Ya'thi Néné Land and Resource staff and board member leadership, and the Athabasca Land Protection Committee members attended a virtual engagement session hosted by the CNSC.

Following the virtual session and review of the documents Ya'thi Néné Land and Resource conducted interviews with members of its ALPC.

MR. SCHMIDT: Apparently we can't click through the slide deck. Would someone be able to click to the next slide? And to the next slide please?

MR. TOUTSAINT: The importance of the land. The land means the world to me. Land provides sustenance for current and future generations. It is connected to traditional knowledge and teachings. It provides for us. And we hunt for our families. Our grandparents worked hard on the land. We have to continue on with what they left for us.

Impact of industry. The lands have

been destroyed from drilling, especially underground mines not properly decommissioned. Permanent disfigurement, contaminated waters. Now remediation has improved the land trying to return it back to mother nature. But the scars are testimony to mankind's negative influence.

Everything has positive and negative. Raised family good financially. Downside is the traffic of the exploration, in and out of the mines, disturbance, water quality, and air dust. Is the land being protected? No. They say they will, but they don't protect, only sand piles.

Everywhere you see the land, the land's already damaged. Now there are steps and processes in place to ensure our land is no longer being impacted. Been a long time coming, but there's still a lot of work to do. Yes, again the time has changed, more organizations like Ya'thi Néné protecting the lands and waters. No, I don't believe it is being protected.

MR. SCHMIDT: For the record, Garrett Schmidt.

What we heard, the Athabasca Denesuline and Basin residents are intrinsically connected to their land in all aspects of their lives. It is evident they have firsthand experience of how mining and exploration have impacted their land and their ability to practice their treaty rights to hunt, trap, fish and gather.

What we heard, Athabasca Denesuline and Basin residents acknowledge that they have seen accumulative impacts of exploration and mining and how reclamation and remediation does not solve all the issues on the land. They have concerns for how the land will continue to be impacted for future generations to come.

Closing remarks. Ya'thi Néné Land and Resource recommends that the CNSC continue to advance more robust and inclusive processes for both itself and licence holders to enable more effective communication and participation with Nuhenéné communities.

Closing remarks. In the words of one of our elders who contributed their knowledge and

perspectives to our review process, "The government needs to respect our views and work with us to ensure a sustainable healthy and affordable lifestyle. They need to be aware of our close relationship to the land and hear our voice."

This is some information with regard to Ya'thi Néné and our offices in Saskatoon and Basin communities.

THE PRESIDENT: Thank you very much for your presentation.

Let me open up the floor for questions then, and we'll start with Dr. Berube.

MEMBER BERUBE: Thank you for your presentation. I have no questions at this point.

THE PRESIDENT: Thank you. Dr. Lacroix.

MEMBER LACROIX: Thank you very much for the presentation. No, I do not have any questions right now.

THE PRESIDENT: Dr. Demeter.

MEMBER DEMETER: Thank you for your presentation and your written submission. I wanted to

reflect that I found the very candid survey-based information very useful. It's a qualitative assessment of people's opinions, and I appreciate the lens that it provides us to look at these issues through other people's eyes and their personal comments.

So I don't have any specific questions, but I want to say how much I appreciate the information provided because I think it provides a perspective that's very important.

THE PRESIDENT: Thank you. Mr. Kahgee.

MEMBER KAHGEE: Thank you, Madam President. And thank you very much for your presentation.

I just have one follow-up questions with respect to your written intervention, and this perhaps is to CNSC Staff.

Has there been any direct follow-up with Resource Office with respect to past recommendations and how those might have been considered in CNSC's analysis and review?

MR. BURTON: Patrick Burton, for the record. Do you mean past recommendations specifically from Ya'thi Néné Land and Resource Office?

MEMBER KAHGEE: Yes, that's correct.

MR. BURTON: Okay. I did speak to a couple of those in my remarks associated with the deck, for instance the plain-language summary was in response to a comment from Ya'thi Néné in the past, as was the transport infographic.

But I will pass it over to Mr. Ryan Froess to see if there's anything that he can add to that response.

MR. FROESS: Ryan Froess, Senior Advisor, Indigenous and Stakeholder Relations, for the record.

Yeah, I would just like to thank Ya'thi Néné for the intervention and their time today.

So the CNSC Staff have tracked concerns brought forth through the ROR and through other interventions in the past that the Ya'thi Néné Land and Resource Office has provided.

A number of their concerns that have

been raised can be grouped into different I guess categories or buckets. Some we've worked with them, can be answered more in the short-term, setting up meetings, answering questions, providing more information, communication, participation.

We've heard a lot about environmental monitoring over the years, how they can be included. And some examples that we've worked with them on in 2020; we did include them on Cigar Lake, they were provided PFP to be involved in that program and provide information on fish species of importance and types of media that are important. So they were involved in that program.

And other more medium-term solutions and I guess solutions that they've provided, and some things that take longer term.

So we've a lot more recently been having discussions with the Ya'thi Néné Land and Resource Office on developing a more formal framework, long-term terms of reference if you may to actually work with the Ya'thi Néné Land and Resource Office to develop quarterly meetings perhaps, with whatever

capacity they have to address some of these concerns. So those are just a couple examples that I can share with you currently.

We're interested in building a strong relationship the Ya'thi Néné Land and Resource Office and continue to be committed to moving forward and sharing information and including them in participation in CNSC-regulated activities and regulations and RORs in the future.

THE PRESIDENT: So maybe I can continue with that line of questioning.

Do you, in a systematic way, keep track of all the recommendations or suggestions that have come, and how do you disposition them or are planning on dispositioning them, and the kinds of conversations that you have had with the Ya'thi Néné on this?

MR. FROESS: Ryan Froess, for the record. So like I said earlier, I guess we would track those through a tracker and we have addressed some of those concerns and we're still building upon those concerns we've heard since 2018, since this is

the fourth intervention they've provided before the Commission on ROR.

So a couple examples -- maybe I'll just pull up a couple of examples that --

THE PRESIDENT: I don't want to see the examples. I just want to understand the process.

So you're keeping track of it, you're discussing, and anytime anyone said, yeah, I'd like to see one of the concerns or recommendations and how that you've dispositioned them, you'd be able to present a document that would show that?

MR. FROESS: Yes. And that's something that we would maybe be working on towards maybe next year's ROR, where we would work with the Ya'thi Néné to address those concerns, and over the year of 2022.

THE PRESIDENT: Thank you. Ms. Maharaj.

MEMBER MAHARAJ: Thank you very much, Madam Velshi. My questions have been asked and answered.

THE PRESIDENT: Thank you.

So maybe a question to the Ya'thi Néné. You were here for the earlier two presentations that we got. And the concerns that you have heard and, you know, the format you used to hear from your communities was a little different.

Do you see inconsistency in what we heard say from the English River First Nation, for instance, and what you have heard with, you know, the sessions you've had?

Where there seems to be a lot of concern around impact. And whereas what we heard from English River First Nation is, hey, licensees are easing our concerns, we feel comfortable that we can carryon with our traditional activities, there's room for improvement, but we're confident that we're being listened to.

How do you reconcile that?

MR. SCHMIDT: Yeah, I can attempt to answer that. And then of course if any of the board members want to also respond.

For the record, Garrett Schmidt.

Yeah, really with this ROR we wanted

to take the approach of providing direct comments from some of our elders and board of directors, and of course them being representatives of their communities.

So what's very clear is that the perspective can be quite varied, depending on who you're talking to. If it's different people in the communities and how they use the land and some of their own experiences.

But in terms of how they relate to some of the other communities, you know, clearly there's some overlapping traditional territory, but very much these -- all the mines, and also exploration sites which we understand aren't under the jurisdiction of the CNSC, but they're very much tied to the industry itself. They are very much in the backyard of these communities, all the historical mines and so on.

So I think that connection and observation is very clear from the communities and very direct. And so that's something that we certainly want to make sure is acknowledged and

understood, and that we continue to work forward in, you know, more robust processes to have more communication and more participation, as our closing remarks identified.

THE PRESIDENT: Thank you very much. Thanks for your intervention and for your submission today. Very much appreciated. Thank you.

This concludes the oral presentations by intervenors.

We'll now proceed with the written submissions. And I'll turn it over to Ms. McGee to walk us through those please.

CMD 21-M34.1

Written submission from Curve Lake First Nation

MS. McGEE: Thank you. The next submission is from the Curve Lake First Nation, as outlined in CMD 21-M34.1.

I will start with Dr. Berube, ask if he has any questions, and invite Commission Members to raise their hand if they have any questions.

Dr. Berube.

MEMBER BERUBE: Thank you to Curve Lake for making another wonderful submission. Very clear and concise in terms of where they stand and what they're concerned about.

One of the things that stood out to me, and maybe CNCS can help answer this. When I read about the Indigenous perspectives on maintenance and stewardship of the land, and there's just very much a holistic approach to it. One of the issues here that Curve Lake brings up is an idea of trying to develop a biological performance matrix.

What we do right now is we tend to sample independent items for country foods and such to look for contamination, make sure that it's fit to eat. But, in general, from living on the land and having experience with the land obviously that's not the way it's interpreted. It would be a much more holistic sense of things.

And so this idea of a biological performance matrix makes a lot more sense from a more holistic perspective.

I'm just wondering how difficult would it be to start looking at a bigger picture than just at, you know, basic country foods and measuring certain things and saying, okay, it's all right, versus looking at the whole spectrum of plant life, you know, and associated life in general, how it interacts, to try and get a sense of how healthy is the environment in those locations versus how healthy are, you know, blueberries or how healthy are fish? You know, that's just one part of the actual matrix.

Could you give some insight as to how difficult that would be to start moving in that direction?

MR. BURTON: Patrick Burton, for the record. Please just bear with us one moment while we find the right person to respond to that.

It looks like Melissa Fabian Mendoza from our Environmental Risk Assessment Division can take a response to that question.

MS. FABIAN MENDOZA: Good afternoon, Melissa Fabian Mendoza, Director of the Environmental Risk Assessment Division.

So what I can offer is that the environmental risk assessment does fulfill this in some sense. So I'll share a bit of information and see if that helps address the question.

So the ERAs do consider valued components in the environment as well as receptors in the area that consume a traditional diet. So included in the ERA is an assessment of water quality, fish quality, vegetation quality. For example, blueberries and Labrador tea. And there's an assessment of the exposures to receptors to ensure that person's in the environment are protected.

In addition, where Indigenous knowledge studies exist, CNSC Staff have began using this information to support the Staff reviews of the ERAs. So this may include, for example, confirming that traditional foods that are consumed, their consumption rates, receptor locations and other environmental features that may exists on their site are taken into consideration in the ERA.

And the ERA does include a conceptual model that shows these various impacts. So I hope

that that provides some helpful context. Thank you.

MR. BURTON: Patrick Burton, for the record. I'd ask whether Kiza Sauvé could add anything to that response as well about how our independent environmental monitoring does also partially fulfill I think the question that you're asking.

MS. SAUVÉ: Kiza Sauvé, for the record. I'm the Director of Health Science and Environmental Compliance Division.

So the wording, you know, the by-law, the matrix, isn't something that we've been using. As Ms. Fabian Mendoza talked about the ERA, that is kind of -- we're looking at all the pathways.

When we do meet with Indigenous communities we do talk about how the water and the soil and the air is really what the people and the environment are interacting with. So while we do take country food and we look at the results from that, we also look at the results in the water and the air, because all of that together shows kind of how the environment is being protected.

But I think I mentioned in November,

at the last round, that we do want to continue working with Curve Lake, because what they're bringing forward is just -- you know, it could help revolutionize our program. So we definitely want to keep working with them.

MEMBER BERUBE: Well, again, I can tell you from my own experience. When I walk into the bush, you know, I'm not thinking about metrics or percentages, but I can tell you how things are doing just by walking around based on experience. And this is what these people are doing too.

So at the end of the day we've got a lot of data and how do we distill that into a picture that people are saying, okay, things are healthy, or vice that is how do we actually get to a point where we're taking an interpretation of what they perceive to be healthy and making that something real? You know, where I guess western science could make sense of it.

So this idea of a biological matrix kind of makes sense to me. It's a pretty big pattern though I would think because there's a lot of

variables. But maybe there's some way to do this, it's worth giving some thought to.

Thank you.

MS. McGEE: Mr. Mooney, I see you have your hand raised?

MR. MOONEY: I do. Maybe I just wanted to add to that. The concerns on the western science and how it was being communicated was precisely why we went to these community-based country food studies. And while maybe not quite what Curve Lake was talking about, it was to provide the assurances that Dr. Irvine talked about that the water is safe to drink and the traditional activities can be safely carried out.

So that shift away from more technical-based programs was a result of that feedback that Kristin and her group had from Northern community members in our collaboration agreement party. So I think that, you know, we have gone quite a ways down that road in addition to the ERAs and the food webs that are assessed as part of that.

The country food studies are very

targeted on what people consume and the areas that they consume them, and that's what is sampled and the results communicated. And a big part of the program, whether you look at the Eastern Athabasca or the community-based monitoring program, is the feedback to the community members, and making sure that they're aware that the studies were carried out.

And a good deal of the budgeting is the development of communication materials the English River First Nation talked about, and ensuring that it is shared with those communities.

So I just wanted to highlight that there has been evolution, and that evolution has been precipitated by the dialogue that we have with our northern stakeholders.

So I think we're in a bit of a different situation in Northern Saskatchewan given the feedback that we've received, that people want those assurances. And, you know, I heard Mr. Burton refer to the independent environmental monitoring program too, and the work that the CNSC Staff have done with First Nations in the vicinity of our operations to

tailor that.

So you have the assurances of our own comprehensive monitoring program, but then you have these regional programs, and three of them in, you know, what is a fairly big area geographically, but not that big an area when you start looking at the overlap between the three programs.

MS. McGEE: Thank you. I don't see any other hands raised.

CMD 21-M34.4

Written submission from the

Canadian Nuclear Workers' Council

So we will proceed to the next submission that's from the Canadian Nuclear Workers' Council, as outlined in CMD 21-M34.4.

Are there any questions regarding this submission? Dr. Lacroix?

MEMBER LACROIX: No questions.

MS. McGEE: Thank you. Again, I don't see any other hands raised. So we will move to the

next -- excuse me, my screen is frozen.

THE PRESIDENT: Oh, let me jump in.

MS. McGEE: Sure, thank you.

CMD 21-34.5

Written submission from the

Saskatchewan Mining Association

THE PRESIDENT: The next presentation is from the Saskatchewan Mining Association, as outlined in CMD 21-M34.5.

Maybe I'll start with Dr. Demeter. Any questions?

MEMBER DEMETER: I have no questions, thank you.

THE PRESIDENT: Anybody else? Seeing no hands up.

CMD 21-M34.6

Written submission from Lac La Ronge Indian Band

THE PRESIDENT: Then let's move to the

submission for Lac La Ronge Indian Band, as outlined in CMD 21-M34.6.

Mr. Kahgee, I' start with you. Any questions?

MEMBER KAHGEE: Just one very brief question. Thank you, Madam Velshi.

And Meegwetch to Lac La Ronge for their submission.

I just have a general follow-up with CNSC staff and perhaps industry if they want to add something to this as well. In a passing reference, in a lot of the presentations today there has been talk about collaboration agreements. Just a general comment. From my experience, these can be very positive steps towards addressing project-specific issues but also become very important tools for reconciling issues from the past and looking forward, much the same way perhaps an IDA would.

I guess my question then to CNSC, is there a positive expectation on industry to conclude these types of agreements?

MR. BURTON: Patrick Burton, for the

record.

We don't have a requirement that our licensees conclude a specific type of agreement with the Indigenous communities that are near their sites. We do very much consider it to be a best practice.

I will pass it over to Mr. Ryan Froess to add a bit more to that -- or, sorry, Mr. Adam Levine. I'm getting my team's chats crossed here.

MR. LEVINE: No problem. Adam Levine, Team Lead, Indigenous Relations and Participant Funding, for the record.

In addition to what Mr. Burton just laid out, we don't have any specific regulatory requirements around concluding agreements such as that as the CNSC's mandate is focused on health, safety and environment. But we do expect, as laid out in our REGDOC-3.2.2 Indigenous Engagement, that industry plays a very important role in early and ongoing engagement, understanding how their operations and activities could impact the exercise of Indigenous or treaty rights and how to mitigate and accommodate those potential impacts, which could include

agreements and collaboration and other measures to mitigate those impacts. We keep a close eye on what is going on in those conversations, but we don't have a specific mandate.

But we are very fortunate that in the uranium industry and the nuclear industry in general there are a lot of best practices from industry out there in terms of these types of agreements and I know the communities emphasize the importance of this and their inclusion in the industry and compensation for impacts, and we want to continue to encourage that as part of ongoing engagement and reconciliation efforts. Thank you.

CMD 21-M34.7

Written submission from the Athabasca Joint Engagement and Environmental Subcommittee

THE PRESIDENT: Okay. Moving on then, our final submission is from the Athabasca Joint Engagement and Environmental Subcommittee, as outlined

in CMD 21-M34.7.

Mr. Kahgee, I will turn to you again. Any questions?

MEMBER KAHGEE: No questions at this time, Madam Velshi.

THE PRESIDENT: Okay. Anybody else?

Okay, I think we have covered all our interventions, so let's open it up for a general round of questions and we will start with Ms. Maharaj, if there are any residual questions left.

MEMBER MAHARAJ: Thank you, Madam Velshi.

I do have a question for Cameco. In your presentation you indicated that as a result of the COVID pandemic you have ceased operations for a period of time at Cigar Lake on two separate occasions, shut down, start up. So in this process -- it's a large operation. In the process of ceasing operations for a temporary period of time, did you have any operational concerns or impacts as a result of that decision?

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

record.

You are right, they are large operations, they don't turn on a dime. So when those decisions are made, they take a few days or weeks to safely secure primarily the underground workings. But, you know, even when we looked at it -- the workforce would, say, be around 300 plus at Cigar Lake during operations, 330, thereabouts -- we would still have 70 to 80 people onsite during a care and maintenance period like the two that we experienced in 2020.

Overall, as a member of the mining industry, we are no strangers to shutdowns, turnarounds as they are called, and we do have lengthy ones typically in the summer period of time and that allows for broader maintenance that is more difficult to undertake while the facility is operating. Those windows have become shorter due to some of those decisions that we made around COVID. So, you know, we have to parcel out some of that maintenance work.

So the longer shutdown that we had, the initial shutdown that we had that took us into

September 2020, we took advantage of that timeframe and tried to -- when we brought it back up in September of 2020 we tried to take on some of the maintenance work that would allow us to run the operation without as long a turnaround.

When we made a decision in December 2020, it was mostly premised on our workforce and maintaining an adequate workforce and we had a significant number of cases in the communities. So the concern was there that with that turnaround that I talked about that we didn't want to find ourselves shorthanded for effectively safely bringing the mine to a state of safe care and maintenance.

So we are experienced at doing it, bringing it up and down. We don't make those decisions lightly of course, but the team there, Lloyd Rowson is our GM and he leads a really professional team. They know what they are about and they do a great job.

MEMBER MAHARAJ: Awesome. Just for one point of clarification, Mr. Mooney. You don't have any emission spikes as a result of coming back up

again into operations typically, or do you?

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

We continue to treat water. One thing about Cigar Lake is it's actually -- despite the challenges that water inflow poses, it's quite a dry mine. So when you look at emissions associated with the facility, it is primarily our treated water and in that space it remains relatively constant because of the freezing that we have in place to limit the -- we don't want to handle water unnecessarily, so that is why we have that mitigation with the bulk freezing that takes place over the Cigar Lake ore body. So some variability for sure. When you look at being in operation, you are going to have heating of buildings and that sort of thing, but as far as emission points control it would look relatively the same in care and maintenance as it would in production within, you know, a range, but not anything peaking with respect to bringing it back up or taking it down.

MEMBER MAHARAJ: Thank you very much.

THE PRESIDENT: Okay.

Dr. Berube...?

MEMBER BERUBE: I want to make a general comment to CNSC on this particular ROR and the fact that it was exceptionally well written and the dispositions were done well. As a matter fact, the benchmark for me on one of these is how many questions do I really have when I am finished reading the document and in this particular case very few, if any, and I have covered them all already, so thank you very much for an excellent report. I have no further questions.

THE PRESIDENT: Excellent. Thank you.

Dr. Lacroix...?

MEMBER LACROIX: I totally agree with you. I totally agree with Dr. Berube on this matter, although I do have two observations and a general question. So I will start with my observations.

On page 138 of the ROR I read that the fish consumption near Beaverlodge site and Lorado site should be limited because of elevated selenium levels. And when I keep on reading, on page 142 I see that no fish should be consumed. Then at the bottom of page

142 I read:

"...living a traditional lifestyle and consuming country foods from the area ... can ... be done safely."

Today I heard Dr. James Irvine from the Saskatchewan Health Authority giving us a warning or advice on the consumption of food in this area. So if I were to live, fish and hunt in these regions, obviously I would follow this advice, but I would value clearer guidelines. How much fish should I consume per year? What species? So I would appreciate this kind of information. So that is a general observation.

My second observation is on page 198, Appendix H, and this is with regard to a radiological action level exceedance at Cigar Lake operation. It says that a welder used an air purifying respirator worn by a watchperson to finish a job. I understand the non-compliance as far as the radiation protection is concerned, but I think that we should not overlook the sanitary protection in this case. In these times of pandemic I would be reluctant, I would be hesitant

to use a respirator worn by someone else. So in this case, you know, I would be more concerned. So this is a general observation.

Now, my question for staff. I wonder, does the freezing of the monitoring ponds affect the migration, the segregation, the dispersion, the absorption, the release of pollutants into the environment?

THE PRESIDENT: We will go to staff first and I see Dr. Irvine wants to address some of the concerns that Dr. Lacroix has raised as well.

MEMBER LACROIX: Thank you.

THE PRESIDENT: So staff...?

MR. BURTON: Patrick Burton, for the record.

I wonder, Member Lacroix, whether you could tell me which site you are asking about there in your question regarding the freezing of monitoring ponds?

MEMBER LACROIX: Any mining and mills facilities, they have ponds and I presume that in Northern Saskatchewan six months a year they are

frozen solid. So does it affect the migration, segregation and so on of the pollutants? And by pollutants, I mean the heavy metals, as well as the chemicals, as well as the radionuclides?

MR. BURTON: Patrick Burton, for the record.

My first response would be that it shouldn't, that the ponds are all lined and so freezing of the pond should not have effects such as what you are describing. But just bear with me one moment to find the --

MR. MOONEY: It's Liam Mooney. Perhaps I could help you out there.

MR. BURTON: Please, Mr. Mooney.

MR. MOONEY: Thanks. On that, we do test pre and post fill of ponds. And they are all well below the regulatory criteria.

So to answer your question, I agree with Mr. Burton's question that it doesn't -- the freezing does not affect. And we have the additional point of control of the testing after they're filled. So to cover that off.

I also wanted to maybe just go back -- and sorry, Dr. Irvine, I'm just going to cut you off -- on the radiological incident that you keyed into.

When the pandemic started, we implemented a sanitizing protocol. And in that space, you know, one of the core elements of it was that you shouldn't be sharing masks.

MEMBER LACROIX: Okay.

MR. MOONEY: And you know, for us generally, like pre-pandemic, masks are always supposed to be washed and sanitized between use. So you know, you've keyed on to something. The focus was on the radiological action level.

MEMBER LACROIX: Right.

MR. MOONEY: But the practice that was at the sharing of masks that you keyed in on is not acceptable either and not in conformance with our own protocols and standards that were in place pre-pandemic and during a pandemic in particular.

MEMBER LACROIX: Okay. That's reassuring. Thank you.

THE PRESIDENT: Okay, Dr. Irvine?

DR. IRVINE: Dr. James Irvine, medical health officer consultant in Northern Saskatchewan.

Thanks, Dr. Lacroix, for that opportunity to clarify things.

The only site in Northern Saskatchewan in which there's a selenium fish advisory is directly downstream from the El Dorado Beaverlodge operation there. And the other locations, modern mine sites, you know, we watch for that. We utilize the sediment levels and the water levels and certainly fish. But there's no need at all for that in other sites.

We've provided to the area around Uranium City predominantly information on how much is safe to consume. Generally, people in Uranium City eat about 700 grams of fish a week.

MEMBER LACROIX: Okay.

DR. IRVINE: So they eat a fair bit of fish.

MEMBER LACROIX: Right.

DR. IRVINE: And it's a great opportunity up there to gather fish.

But we suggest that for things like lake trout and northern pike that if they're eating it from Beaverlodge or Martin Lake, they should have about once a week having a size of fish fillet which would be about as large as your hand.

MEMBER LACROIX: Oh, right.

DR. IRVINE: So if that was one serving, they could have five of them a month, if it was trout or Beaverlodge -- or trout or northern pike. If it was white sucker or lake whitefish, you could have that one-hand size in thickness twice a month.

MEMBER LACROIX: Okay.

DR. IRVINE: And generally, people around Uranium City, if they do consume from the Martin Lake, Beaverlodge area, they also utilize lots of the other lakes around there in which it's perfectly safe to be consuming fish for -- because of selenium purposes.

So hopefully that clarifies things some for you. Thank you.

MEMBER LACROIX: Absolutely. Thank you very much. I really appreciate. Thank you.

THE PRESIDENT: Mr. Burton?

MR. BURTON: Thank you. Patrick Burton, for the record.

I'd just like to ask William Stewart, who's our project officer for the Cigar Lake site. He has a bit more information about the action level exceedance regarding the respirators that you raised.

MR. STEWART: Thank you very much.

William Stewart, senior project officer, Uranium Mines and Mills.

I just want to clarify that with respect to the question on the respirators worn by the welder, there's a difference between the respirators, the PAPR worn by the worker and the dust pumps worn by the worker. The dust pumps are worn by the worker to measure radioactive dust in the area while they're working because they have a protection factor with respect to the respirators.

So there was no personal respirator passed between the two workers. It was the air sampling dust pump that was passed between the workers, so there was no potential for transfer of

sanitary materials there. I hope that clarifies that point.

MEMBER LACROIX: Absolutely. I stand corrected. Thank you very much. Appreciate it.

THE PRESIDENT: Thank you for that.

Dr. Demeter?

MEMBER DEMETER: Thank you. I concur with my colleague. This was well written and I didn't have very many questions left. I have just one outlier question that I think I can surmise what the reason is.

So for Rabbit Lake, operational lost time injury, which is Table 5.4 in the staff CMD, there's a lost time severity of 104 in 2019, and 40.86 in 2020. I suspect that's one individual had a severe accident that that carries over, because the total reported incidents hasn't gone up. But it's such a large number and an outlier, I would like a little asterisk to sort of help me understand what that's about. So I'm not sure if Cameco can comment on that sort of high severity index whereas everything else is fairly stable.

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

And on that, we had one lost time incident in 2019. And in 2020, it was the first time as an organization that we had zero lost time incidents. So that was a fairly major milestone.

But as you note, we've also moved more into the reportable incident space.

MEMBER DEMETER: Right.

MR. MOONEY: As opposed to lost time.

But the event that -- the injury that we're speaking of was that an administrative employee was experiencing pain and soreness in both wrists and was flown off site for further evaluation. That employee has returned to work, but the hours continued to accrue. So the event was 2019, but the hours continued to accrue into 2020. So you had it, just I wanted -- it wasn't -- it was a repetitive strain injury that gave rise to the lost time incident in 2019.

MEMBER DEMETER: Okay. Thank you. I have no further questions.

THE PRESIDENT: Thank you.

Mr. Kahgee?

MEMBER KAHGEE: Thank you, President Velshi.

I echo the sentiments of my colleagues. Thank you to CNSC staff for their efforts and their work. I have no further additional questions at this time.

THE PRESIDENT: Thank you.

Let's take this opportunity to ask some of the other representatives from other government departments who are here to see if they have any perspectives they want to share with the Commission.

And we'll start with the Saskatchewan Ministry of Labour. Mr. Kaskiw, anything from you, please? If you're still with us ...?

MR. BURTON: Patrick Burton, for the record.

I think Mr. Kaskiw indicated that he would have to step out for another engagement part way through this meeting. So he's probably already past

that point.

THE PRESIDENT: Well, let's see if Mr. Moulding from the Saskatchewan Ministry of Environment is here.

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

Our observations with respect to sections of report reviews for the calendar year 2020 correspond with those of the CNSC, and we don't have any issues to report that would contradict any information that the CNSC staff has provided.

THE PRESIDENT: Okay. Thanks for that confirmation.

From the Saskatchewan Ministry of Energy and Resources, do we have anyone still here with us? Okay.

I see Ms. Ali, you've got your hand up, so let's go to Environment and Climate Change Canada. Over to you.

MS. ALI: Okay. So Nardia Ali, Environment and Climate Change Canada, for the record.

So I've been listening to all the

discussions about, you know, selenium and fish and whatever. And I think that there's one topic that we haven't mentioned today, and that is that operational uranium mines are under the *Metal and Diamond Mining Effluent Regulations*, that include a biological monitoring program known as the EEM program, regulated EEM program that includes a fish survey, a benthic invertebrate survey, water quality monitoring, sediment monitoring. And they do these studies on an average about every three years.

So the last one that Environment Canada reviewed, the most recent one was submitted in June of 2020. And they conducted water quality monitoring within, you know, Seru Bay, for Cigar Lake in particular, so I'm just going to give Cigar Lake as an example. They conducted water quality monitoring within the Seru Bay and the Seru Bay outlet exposure areas, Longyear Bay, East Brown Bay reference areas in the summer of 2019. And this recent monitoring data that supports some of the other receiving environments showed aqueous concentrations of arsenic, selenium, uranium, and molybdenum. They showed that these

levels are within the range or lower than the predicted 2019 ERA addendum concentrations and also lower than regulated limits.

Additionally, the sediment quality monitoring was also conducted as part of the EEM program in 2019. And measured concentrations of arsenic, selenium, uranium, and molybdenum in sediment also remain with the range of below predicted 2019 area concentrations.

So EEM also, you know, is generating all this information. And we're not seeing levels of concern. And also EEM also discusses effects on fish and their specific parameters that are looked at.

So I just wanted to let the Commission know that this is a regulated program that provides very useful information and is showing that there's not a big need for concern based on the last report that we've seen for some of these sites.

THE PRESIDENT: Thank you very much for sharing that. That is indeed reassuring.

Ministry of Government Relations? Anyone here?

MR. BOYES: Madam Chair?

THE PRESIDENT: Go ahead.

MR. BOYES: Yes, my name is Scott Boyes. I'm with the Ministry of Government Relations. And thank you for the invitation to participate. There are a couple of us on the call.

Our Ministry's interest is in the engagement of northern relations. That's where we come into the picture. And it's the basis for a few of our programs, including the NSEQC, the Northern Saskatchewan Environmental Quality Committee. And I see, yes, that rings a bell. And I'm very happy about that.

First of all, our observation is that the producers are engaging with northern communities, and they and all of us acknowledge the need for that continued effort. I think we, you know, we see the work that is put into that. Northerners have said that this is what they expect. They expect it of producers, and they expect it of regulators. And you've heard that as well.

We do have a new manager for our

NSEQC, because we provide a staff member to support the nominees. And with your permission, I will briefly introduce her. Producers and your own staff reached out, actually, as soon as they heard that we have a new manager. They were very anxious to introduce themselves and get to know here.

The new manager is Ashley Carlson. She was actually born and raised where I currently am, in La Ronge. And if I could briefly just ask Ashley to introduce herself, because you will be seeing her on future calls representing GR.

THE PRESIDENT: Okay. Ms. Carlson, over to you.

MR. BOYES: Oh, oh, Ashley -- I can hear her in the office next door, so there's a technical problem.

THE PRESIDENT: Okay. Well, I guess she'll have to introduce herself the next time she appears --

MR. BOYES: We will.

THE PRESIDENT: Thanks very much for that, Mr. Boyes.

So this concludes the public meeting of the Commission for today. And I really want to thank the CNSC staff for the excellent report and presentation. A special thanks to Cameco and Orano, not only for your appearance today, but for your excellent performance during these challenging times, to all our intervenors for their very thoughtful submissions, and to all the folks from the Uranium Historic and Decommissioned Sites as well. We didn't have an questions for you because we were pretty confident with what we'd heard that any issues are being well handled.

So again, thank you all for your participation. Stay safe, stay well, and we will be resuming tomorrow at 10 a.m. Eastern Standard Time for our next ROR.

Bonne fin de journée, tout le monde.

Au revoir.

--- Whereupon the hearing adjourned at 5:26 p.m.,
to resume on Thursday, December 16, 2021
at 10:00 a.m. / L'audience est ajournée à 17 h 26
pour reprendre le jeudi 15 décembre 2021 à 10 h 00