Canadian Nuclear Safety Commission

Commission canadienne de sûreté nucléaire

Public meeting

Réunion publique

December 8th, 2020

Le 8 décembre 2020

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. Timothy Berube
Dr. Marcel Lacroix
Dr. Stephen McKinnon

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

Secretary:

Mr. Marc Leblanc

Secrétaire:

Me Marc Leblanc

Senior General Counsel:

Ms Lisa Thiele

Avocate-générale principale :

Me Lisa Thiele

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Ottawa, Ontario / Ottawa (Ontario)

--- Upon commencing on Tuesday, December 8, 2020
at 9:00 a.m. / La réunion débute le
mardi 8 décembre 2020 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. Stephen McKinnon, Dr. Marcel Lacroix and Dr. Timothy Berube.

Ms Lisa Thiele, Senior General Counsel to the Commission, and Marc Leblanc, Commission Secretary, are also joining us remotely.

As always, I would like to begin today's Commission Meeting with a Safety Moment, to talk about the pandemic.

COVID-19 has not gone away and even though gatherings in December and January may be an important event in our families' lives, there are new and difficult decisions ahead. Many people have fond memories of multigenerational events at this time of year, people gathering from near and far. But, can we see family safely? Should we? What are the risks? We know the benefits of a visit, but should we still skip it? The key to a safe holiday for each of us and for society as a whole is to limit the chance that we bring the virus to a gathering and limit the chance that we spread it either at a family get-together or after.

Public health guidance runs up against our powerful and valid feelings connected to family traditions. This may create the strongest temptation we have faced in 2020 to ignore the recommendations of public health experts. However, we must resist that temptation and

strictly follow the advice of public health experts in both the place where we live and the location of the gathering.

It is important to have the awkward family conversations as soon as possible, whether you are traditionally a host or an invited guest. If you decide to host, establish the ground rules well in advance. If you decline an invitation, then express your regrets, explain that it is an emergency manoeuvre for 2020 and convey your hope that things will be better in 2021.

Some of us will decide that a family gathering is too great a risk and if that is your choice then it is okay to be sad. Should you decide to attend, it is okay to be anxious when thinking about whether the risks have been truly mitigated. Neither of these choices is likely to make you feel the kind of unconditional happiness we associate with this time of year. I wish you peace with these choices and safe travels no matter how far or near they take you.

Thank you.

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

Marc...?

M. LEBLANC : Merci, Madame la Présidente. Bonjour, Mesdames et Messieurs.

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 our 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.

As usual, the President will be coordinating the questions. During the question period, if you wish to provide an answer or add a comment, please use the Raised 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 published on December 3rd for the complete list of items to be presented today and in the next two days.

I also wish to note that all the

Commission Member Documents, referred to as CMDs, listed on the agenda are available for download on the CNSC website.

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

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

President Velshi...?

CMD 20-M40.A

Adoption of Agenda

THE PRESIDENT: Thank you, Marc.

With this information, I would now like to call for the adoption of the agenda by the Commission Members, as outlined in Commission Member Document CMD 20-M40.A.

Do we have concurrence?

For the record, the agenda is adopted.

The first item on the agenda today is the Regulatory Oversight Report on Uranium and Nuclear Processing Facilities in Canada: 2019, and the update on

Cameco Corporation's Vision in Motion Project.

The public was invited to comment in writing. The Commission received eight submissions. We will hear the presentation from Cameco Corporation on the Vision in Motion Project, followed by the presentation from CNSC staff on the Regulatory Oversight Report and verbal comments from licensees.

The submissions from intervenors will be addressed after the break, including an oral presentation from the Algonquins of Pikwakanagan First Nation.

I note that licensees and representatives from Environment and Climate Change Canada are joining us to be available for questions.

I will turn the floor to Cameco for their presentation on the Vision in Motion Project.

Mr. Mooney, the floor is yours.

CMD 20-M36.1

Oral presentation by Cameco Corporation

MR. MOONEY: Thank you.

Good morning, President Velshi and Commission Members.

For the record, I am Liam Money, Cameco's Vice President of Safety, Health, Environment, Quality and

Regulatory Relations.

Joining me today virtually are Tom Smith, our Director of Regulatory Compliance and Licensing at Cameco Fuel Services Division, and Rebecca Peters, the Superintendent, Special Projects, who are going to carry the bulk of the presentation today.

With that, I will turn it over to Tom Smith.

MR. SMITH: Good morning, President Velshi and Commission Members.

Can you hear me all right?

THE PRESIDENT: Yes, we can.

MR. SMITH: Thank you.

Okay. For the record, I am Tom Smith, the Director of Regulatory Compliance and Licensing for the Fuel Services Division. I am here to provide an update on the Vision in Motion project which has come before the Commission numerous times.

Cameco conducted a comprehensive Environmental Assessment on the project and licensed the project during the last relicensing of the Port Hope Conversion Facility. The Vision in Motion project is a significant, long-term investment in the Port Hope Conversion Facility site.

Can I have the next slide, please?

The VIM project includes the following activities:

- removal of up to 150,000 cubic metres of accumulated waste, contaminated soil and building debris;

- removal of some of the site's buildings;

- refurbishment of some buildings to improve the look and efficiency of the site;

- installation of a flood barrier on the east side of the property that will also provide radiation, noise and visual shielding;

- improvements to the site's stormwater management infrastructures; and

- shifting of the fence line at the south end of the property by about 16 metres to the north.

Next slide, please.

Significant physical progress has been made on the project in the last two years.

Since the Long-Term Waste Management Facility opened in June 2018, Cameco has shipped approximately 23,500 cubic metres of waste, including packaged waste, soil and building debris.

The majority of the accumulated waste at the Centre Pier property was transferred to the LTWMF by January 2019.

Repackaging/preparation of the waste at

the main site and Dorset Street warehouses was started at about the same time.

In June 2019, Cameco completed the demolition of the Centre Pier buildings, at which time care and control of the Centre Pier was transferred to Canadian Nuclear Laboratories. CNL has the responsibility for the sub-surface remediation of that site.

The Municipality of Port Hope completed a provincial Environmental Assessment associated with the Choate Road extension in August 2020. I will speak more to this later in the presentation.

Waste repackaging began in 2017 and since this was started the accumulated waste has been reduced by approximately 50 percent.

Next slide, please.

As referenced by Mr. Mooney, the Vision in Motion project has been many years in the making. The timeline from 2001 to 2016 has had many milestones worth noting, including:

The 2001 Federal Municipal Agreement between Canada and the host communities was signed, forming the Port Hope Area Initiative.

In that Agreement, Cameco was allocated approximately 150,000 cubic metres of space in the to-be-developed Long-Term Waste Management Facility.

Cameco announced the project in 2002, which was then titled Vision 2010 and later changed to Vision in Motion.

Over the next several decades Cameco carried out a significant consultation process.

The project description was submitted in 2006.

The Environmental Impact Study was completed in December 2010 and the EA process finished in 2012.

Certain legal agreements pertaining to land transfers were signed with the Municipality of Port Hope in 2014.

Next slide, please.

In the summer of 2017, drums of magnesium fluoride in storage at the Centre Pier were transferred to the main site and bagged.

Delivery of the bags to the LTWMF was initiated when it opened in June 2018 and repackaging continued at the main site throughout the summer of 2018.

In 2019, the Centre Pier buildings were demolished.

In 2020, the project scope was re-evaluated and changes to the Choate Street extension were proposed to the Municipality of Port Hope.

Next slide, please.

COVID-19 impacted Cameco, as it did all of Canada, and the VIM project was no exception.

In mid-March, Cameco suspended all non-essential work to limit the number of contractors at the Port Hope Conversion Facility.

Cameco suspended shipments to the LTWMF when this operation underwent a temporary shutdown.

The LTWMF resumed operation in July 2020. However, the number of VIM contractors returning to site has been tightly controlled.

Remobilization of contractors in 2021 is anticipated once the COVID-19 situation improves.

Next slide, please.

Cameco is committed to community engagement.

We had community outreach at VIM Open House in 2018, followed by participating in the Port Hope Fall Fair.

In 2019, we participated in the fair, as well hosted a community barbeque.

In 2020, we have been limited in engagement opportunities due to COVID-19. However, we continue to issue our Energize newsletter, engage in social media and keep our website updated.

Also in 2020, Cameco revised our public information program and planned to post the updated public disclosure protocol on our website. That was actually posted yesterday.

In November 2020, Cameco sent letters out to the indigenous communities identified as our primary target audience regarding the Cameco operations in Northumberland County in accordance with our updated public information program.

I will now pass the presentation over to Rebecca Peters.

MS PETERS: Good morning, President Velshi and Commission Members.

For the record, Rebecca Peters, Superintendent Special Projects for the Fuel Services Division.

Could I have the next slide, please?

As a result of decades of operations with nuclear materials predating the formation of Cameco in 1988, significant quantities of low-level radioactive waste were accumulated and stored in licensed warehouses in Port Hope. At the beginning of the VIM project, an estimated 35,000 drums of accumulated waste were attributable to the operations of Eldorado Nuclear and therefore eligible for disposal at the LTWMF.

The contents of the drums are primarily contaminated non-combustible materials such as soil, concrete, asbestos and small metal parts, as well as various production wastes, including non-recoverable uranium material from production vessels and decontamination equipment.

The LTWMF opened to the receipt of Cameco waste in June 2018 and Cameco's first shipment was made on June 20, 2018. As of December 1, 2020, 985 shipments of packaged waste have been made to the LTWMF from the Centre Pier property, the Dorset Street warehouses and the PHCF main site, reducing the accumulated waste inventory by approximately 50 percent.

Could I have the next slide, please?

Every drum of accumulated waste is visually verified, characterized as appropriate, inventoried and packaged for shipment in accordance with CNL's waste acceptance criteria. Accumulated waste is packaged in rigid packaging such as drums or overpacks, as well as compressible packaging such as totes or lift bags.

During the summer production shutdown periods in 2017 and 2018, site workers were redeployed to drum processing projects to expand the resources available for the early VIM activities. These projects involved transporting drummed waste from the Centre Pier buildings

to the main site for repackaging.

These campaigns involved emptying the contents of 6 to 8 drums of designated material into PacTec IP-2 rated lift bags, crushing the drums and including the crushed drums in the bags. The bags were then transferred to interim storage at the Centre Pier until the LTWMF was ready to receive wastes.

This slide shows the drum dumping setup and bagged and drummed inventory of accumulated waste.

Could I have the next slide, please.

The initial focus of the VIM accumulated waste management was the waste stored at the Centre Pier which was from the uranium metal processing facility operated by Eldorado. This material represented more than 90 percent of the drums stored at this location. These materials were well characterized in terms of uranium content and could be easily verified visually. Approximately 15,000 drums were repackaged and shipped to the LTWMF between June 2018 and January 2019.

Could I have the next slide, please?

Cameco transfers bulk waste such as soil from excavations, asphalt and building debris to the LTWMF using dump trucks and roll-off bins. More than 1,300 dump truck loads and 230 roll-off bins have been sent to date. All packaged waste, meaning the drums, totes and bags, are

transferred to the LTWMF in a 40-foot IP-2 transport container. All materials in the IP-2 are unloaded using a forklift and then transferred to the appropriate cell.

Waste materials with measurable concentrations of uranium of Eldorado origin that cannot be recovered by Cameco are subject to verification by the International Atomic Energy Agency, IAEA, through a measurement portal at the LTWMF.

Cameco has also supported significant onsite verification activities by the IAEA during the project, including multiple complementary access visits and a technical visit related to the Dorset Street inventory, as well as short notice random inspections and the annual physical inventory verifications. The IAEA focus on these materials has expanded since the shipments to the LTWMF began.

Could I have the next slide, please?

In 2018, Cameco began work on the former UF_6 plant which has not operated since the 1980s. The scope of the work underway is the deconstruction of the interior contents of the building, including the removal of:

- residual process material;
- process equipment and piping;
- electrical infrastructure;
- building service equipment; and

- accumulated waste.

These materials will ultimately be transferred to the LTWMF.

This work was halted in 2020 due to the COVID-19 pandemic and the suspension of non-essential work in March 2020.

The removal of accumulated waste resumed in November 2020 and is expected to be completed by the end of the year. Other activities in this building will resume in 2021.

Could I have the next slide, please?

The Centre Pier property is owned by the Municipality of Port Hope. Under the direction of the municipality, prior to the termination of the lease arrangement, Cameco demolished the three remaining buildings on the Centre Pier. The demolition activities occurred between March and April 2019, with the transfer of all building demolition debris to the LTWMF, removal of construction material and installation of a flood-protection wall completed by June 17, 2019. Following verification by CNSC staff that Cameco's licensed activities were permanently terminated at the Centre Pier and that all follow-up commitments were completed, the care and control of the Centre Pier property was transferred to CNL on June 28, 2019.

Could I have the next slide, please? Could you start the video?

--- Pause

MS PETERS: Do you want me to keep going? Okay.

So while we are --

THE PRESIDENT: I'm sorry, Rebecca, let me just check.

Marc, are we getting the video going?

MR. LEBLANC: Yes. We will try again. We can see it here in Ottawa, but we will try it again to -- so I can see from the non-verbal that it is not working for you, so we will restart it from here and make sure that we have on the sound.

MS PETERS: Okay.

MR. LEBLANC: So it is a 55-second video and the technicians are working on it at the moment.

--- Pause

MS PETERS: That looks promising.

MR. LEBLANC: So it should be good now.

MS PETERS: Okay.

So this video is a time lapse for the demolition of Building 40, the most northern building that was on the Centre Pier. It shows the systematic approach utilized by Cameco and its contractors to demolish the

building and sort the materials for transfer to the LTWMF. All of the building debris was transferred to the LTWMF using roll-off bins.

--- Pause

Thank you. Could I have the next slide, please?

So this is an aerial photo that shows the Centre Pier prior to the demolition of the buildings on the Centre Pier.

Could I have the next slide, please?

And this photo shows the Centre Pier following the demolition of the buildings and prior to transfer to CNL for use in the remediation of the Port Hope Harbour.

I will now turn the presentation back to Tom Smith.

MR. SMITH: Next slide, please.

Okay, for the record, Tom Smith, director of Regulatory Licensing and Compliance for Cameco's Fuel Services Division.

So with respect to Choate Road, we've proposed the following. The Choate Road street extension was part of the original approved federal environmental assessment, and the Municipality had to undergo a provincial environmental assessment which was approved in

August 2020. However, an opportunity was identified to improve the plan and also reflect stakeholder input.

The Municipality of Port Hope is in agreement and passed a resolution unanimously in December 2020 supporting the proposed changes to the Vision In Motion project, including removal of the Choate Street extension. Now revisions will have to take place with respect to the existing legal agreements between Cameco and the Municipality.

Next slide, please.

This slide shows the previous plan for the Choate Road extension, parking lot expansion, and new cylinder storage area along with fence line shifts on the east and south sides of the facility.

Next slide, please.

The revised VIM illustration now shows the existing parking lot and existing roads will remain, new harbour wall, which will be undertaken by CNL, provides new land on the east side of the facility, and we still shift the fence at the south end of the conversion facility.

Next slide.

This is a shot looking from east to west, and it shows the additional public land that will result as a result of the installation of the new harbour wall.

Next slide, please.

With respect to the work planned for 2021, this slide provides a high-level summary subject to further impacts from COVID-19. We would note that in the slide deck, the third bullet refers to Building 27 when it should read Building 2. Building 2 was the original refinery located at the site.

In summary, Cameco plans to remobilize the Building 27 contractor and continue with equipment removal and tower removal; make improvements to the Dorset Street warehouses; deconstruct and remove equipment in Building 5B; and remobilize a contractor for Building 2 to conduct equipment removal.

In reducing the accumulated legacy waste by 50 per cent, Cameco has already safely carried out VIM project work as planned, in a manner that protects the workers, public, and the environment while maintaining a collaborative working relationship with Canadian Nuclear Laboratories and the Municipality of Port Hope. The end result will be a much-improved facility that accords with the input from the stakeholders while taking the opportunity to remove legacy waste.

Thank you for your attention. This ends the presentation.

THE PRESIDENT: Thank you, Mr. Mooney and Mr. Smith and Ms Peters for that great presentation. I'm

really glad we were able to see the time lapse video.

I'll now turn the floor to CNSC staff for the presentation on the Regulatory Oversight Report on Uranium and Nuclear Processing Facilities in Canada: 2019. And I'll turn the floor over to Ms Murthy.

CMD 20-M36/20-M36.A/20-M36.B/20-M36.C

Oral presentation by CNSC staff

MS MURTHY: Thank you.

Good morning, President Velshi and Members of the Commission. My name is Kavita Murthy, and I am the director general of the Directorate of Nuclear Cycle and Facilities Regulation.

This is the first in the set of three regulatory oversight reports that comprise the activities regulated under the nuclear fuel cycle program at the CNSC.

Each ROR in this set of three is focused on a regulatory oversight program that is managed at a divisional level. This ROR will be presented by the regulatory program director for the Nuclear Processing Facilities Division, Dr. Caroline Ducros, and her team, with support from subject matter experts and specialists from across the CNSC who partner in delivering the compliance oversight of the facilities.

Over to you, Caroline.

DR. DUCROS: Good morning, President Velshi, Members of the Commission. I am Dr. Caroline Ducros; I am the director of the Nuclear Processing Facilities Division.

My colleagues with me today are Mr. John Thelen and Mr. Michael Young, project officers and inspectors working in the same division. We also have licensing and compliance staff as well as subject matter experts with us to help answer any questions the Commission may have.

Today, we are here to present Commission Member Document CMD 20-M36, titled "Regulatory Oversight Report for Uranium and Nuclear Substance Processing Facilities in Canada: 2019."

This presentation, CMD 20-M36.C, submitted to the Secretariat on December 2nd, 2020, replaces CMD 20-M36.A, which was submitted on October 5th. The revised presentation contains the following changes: slide 3 in CMD 20-M36.A was duplicated in error and has been removed; slide 16 and 39 were updated to provide trend arrows; slides 55 to 57 were added to provide information on the participant funding program recipients and interventions received for this regulatory oversight report. CNSC staff also identified and corrected some minor typos throughout

the presentation.

CNSC staff also submitted supplemental CMD 20-M36.B to address comments and recommendations from the interventions received for this regulatory oversight report.

We start our presentation with a brief description of the regulatory oversight report. Following this is an overview of CNSC's risk-informed regulatory oversight activities associated with the facilities listed on this slide. In line with the regulatory oversight report, and as shown on the right side, the presentation is then divided into uranium processing facilities and the nuclear substance processing facilities. Finally, we will cover some of the major themes identified in the interventions which the CNSC has received.

The CNSC currently produces a number of regulatory oversight reports, as shown on this slide. The 2019 report for uranium and nuclear substance processing facilities in Canada presented CNSC staff's assessment of the safety performance of operating uranium and nuclear substance processing facilities.

The Commission requested two follow-up actions from last year's regulatory oversight report.

The first was a request to licensees to provide the direct points of contact to CNSC staff so that

they could then be made publicly available to assist intervenors. Licensees provided the requested information and this action is considered closed.

The second was a request to CNSC staff to provide a summary of the basis behind derived release limits or DRLs. In response to this request, we have included Appendix M of CMD 20-M36 that provides a fact sheet for licence limits for releases to the environment.

This is the eighth annual report on uranium and nuclear substance processing facilities present to the Commission. The public has been invited to intervene on each of these annual reports.

The report covers the 2019 calendar year and includes a summary of the CNSC's regulatory efforts; overviews highlighting performance across similar facilities; and site-specific sections outlining licensee information on operations and major developments; CNSC staff's safety and control areas performance ratings; and detailed performance reporting on the following three safety and control areas: radiation protection, environmental protection, and conventional health and safety.

The next slides provide an overview of CNSC's regulatory oversight for these facilities.

The Canadian Nuclear Safety Commission

regulates Canada's uranium and nuclear substance processing facilities to protect the health, safety, and security of Canadians and the environment.

Compliance is verified through inspection/verification activities; reviews of operational activities and documentation; and licensee reporting of performance data, including annual reports and unusual occurrences.

The extent of regulatory oversight is commensurate with the risk associated with each licensed activity.

The CNSC measures a licensee's performance by its ability to mitigate risks posed by the licensed activities and to comply with regulatory requirements. CNSC staff use 14 safety and control areas (SCAs) to evaluate each licensee's performance, which are shown on this slide.

CNSC staff continually assess the licensees' performance based on results of regulatory oversight activities.

Please note that because of early impacts related to the COVID-19 restrictions during the time of the assessment, for this 2019 ROR, facility performance assessment used a binary approach. That is, licensees were only rated as either Satisfactory (SA) or Below Expectation

(BE). It's important to recognize that a facility that received an SCA rating of Fully Satisfactory (FS) in the 2018 ROR and now has a rating of Satisfactory (SA) does not necessarily indicate a reduction in performance.

Regulatory oversight occurs throughout the year. Any indications of unsatisfactory performance would have been addressed during the ongoing compliance oversight. All licensees met all CNSC expectations, so there was no need to consider the unsatisfactory rating.

The binary rating approach considerably reduced the effort that is often needed to reach a consensus on final rating.

Safety and control area performance is rated using set criteria such as key performance indicators, compliance with licence conditions, events, repeat non-compliances, and licensee action in response to events, as well as the nature of the events themselves. CNSC staff assign ratings to safety and control areas based on professional judgment, expertise, and information collected. CNSC staff consider a multitude of inputs and assign a rating that best represents licensees' performance in a holistic manner. The rating methodology was presented as part of the 2017 ROR.

The CNSC has implemented its Independent Environmental Monitoring Program (IEMP) to verify that the

public and the environment around licensed nuclear facilities are safe. CNSC conducted its IEMP sampling in 2019 around the BWXT Toronto and Peterborough facilities. Results are posted on the CNSC's IEMP website. IEMP sampling at other sites continues to be conducted in accordance with CNSC staff's IEMP sampling plan. The results from the IEMP demonstrate that the licensees' environmental protection programs are effective and that the people and the surrounding environment are protected.

CNSC staff routinely engage with the public and Indigenous groups. Examples include participation in relevant community events as a means to inform the public of the CNSC's role, and engagement and consultation with Indigenous groups to discuss issues of concern to them and related to the CNSC's mandate.

CNSC staff are committed to building long-term positive relationships with Indigenous communities. We understand that such relationships must be built on mutual trust, which can take time to develop. CNSC staff will continue to meet and engage with Indigenous groups with an interest in CNSC-regulated uranium and nuclear substance processing facilities upon request to provide updates and to build these important relationships.

Please note that at the end of this presentation, I will speak to recent regulatory oversight

activities conducted under the COVID-19 restrictions.

I will now pass the presentation to Mr. John Thelen.

MR. THELEN: Thank you.

And good morning, President Velshi and Members of the Commission. My name is John Thelen, and I am a senior project officer and inspector in the CNSC's Nuclear Processing Facilities Division.

The following slides provide an overview of the regulatory oversight activities, performance ratings, and safety performance metrics of uranium processing facilities in Canada for the 2019 calendar year.

But first, this figure illustrates the nuclear fuel cycle, which begins with uranium being extracted from the ground and ends with its disposal following its use in the generation of energy. The dashed red box in the slide indicates the scope of the facilities included in this regulatory oversight report. The processes in the dark green are the front end of the uranium processing cycle for natural uranium fuel. Those in orange are the back end of the uranium processing cycle, and those in light green are the front end of the uranium processing cycle for enriched uranium fuel.

Note that the processes described in light green are not part of the Canadian nuclear fuel cycle.

Although uranium hexafluoride is produced in Canada, enrichment is not done in this country. Uranium hexafluoride is exported for enrichment and processing for use in light water reactors around the world.

In the first dark green box, called "Uranium Refining," natural uranium is refined into uranium trioxide at the Blind River Refinery. In the second dark green box, called "Uranium Conversion," the uranium trioxide is converted into two products, uranium dioxide and uranium hexafluoride, at the Port Hope Conversion Facility. And finally, in the third green box, called "UO_2 Natural Fuel," the uranium dioxide is formed into pellets and fuel bundles are assembled. These activities are carried out at the Cameco fuel manufacturing facilities and the BWXT Nuclear Energy Canada facilities.

This slide presents the locations of Canada's uranium processing facilities. They include Cameco Corporation's Blind River Refinery, Port Hope Conversion Facility, and Cameco Fuel Manufacturing Facility, as well as BWXT Nuclear Energy Canada in Toronto and Peterborough. As you see, all facilities are located in the province of Ontario. The licence expiry dates and financial guarantee values for these facilities are also shown in this table.

With respect to regulatory oversight in

2019, CNSC staff spent a total of 330 person days on licensing activities for the uranium processing facilities and 864 person days on compliance activities. Staff performed 14 inspections at these facilities in 2019. All identified non-compliances were recorded and are tracked to completion using the CNSC's regulatory information bank or RIB database system.

The table also identifies the trend changes compared to regulatory oversight activities in 2018. An up-trending arrow indicates an increasing trend, a down-trending arrow indicates a decreasing trend, and a horizontal arrow indicates no change.

Of note is the increasing trend at BWXT for both licensing and compliance, which was due to activities associated with the initiating review of BWXT's licensing application for the relicensing hearing that was held during the week of March 2nd to 6th of 2020 in Toronto and Peterborough.

For the other facilities, variation is expected to occur from year to year, and the trend arrows do not indicate a significant change in regulatory oversight activities.

With respect to performance ratings in 2019, all of the uranium processing facilities met CNSC requirements and received a satisfactory rating for all

safety and control areas or SCAs. This indicates that all listed licensees met requirements, CNSC expectations, and that their implementation of safety and control measures were sufficiently effective.

Over the next few slides, I will present the performance and trends for the radiation protection SCA, environmental protection SCA, and conventional health and safety SCAs.

However, before I begin, I will use this slide to provide an example illustration of the relationships between a regulatory limit, an action level, and a monitored parameter during normal operation.

The region with the dots at the bottom represents an expected range during normal operation for a given parameter.

The red line at the top of the graph represents a regulatory limit. This would be prescribed in regulation and, if exceeded, warrants enforcement action.

The blue line on the graph depicts an action level. This is an internal program value that is facility-specific and is typically set much lower than the regulatory limit. The action level serves as an indication that, if exceeded, may indicate a potential loss of control with a program. So when this occurs, the licensee is required to notify the CNSC of the action level exceedance,

perform an investigation, and where needed, carry out subsequent corrective actions and take preventive measures.

With respect to the radiation protection safety and control area, the graph on this slide shows the average and maximum individual effective dose to nuclear energy workers in 2019 for all uranium processing facilities. The red line on this chart represents the regulatory effective dose limit for nuclear energy workers of 50 mSv. As illustrated, doses to workers at all uranium processing facilities were well below the 50 mSv regulatory dose limit in any one year.

Continuing with the radiation safety and control area, the graph on this slide shows the five-year trend for effective doses to nuclear energy workers from 2015 to 2019 for all uranium processing facilities.

The average effective dose per worker for each year are overlaid on the maximum effective dose, and for each column, the colour on the lower portion indicates the average effective dose, and the colour on the upper portion indicates the maximum effective dose. The number at the top of each column is the maximum effective dose.

In addition to the annual effective dose limit of 50 mSv in any one year, a regulatory dose limit of 100 mSv over a defined five-year dosimetry period is applied for a nuclear energy worker. As illustrated, doses

to workers at all uranium processing facilities were well below the 50 mSv regulatory dose limit in any one year, and on track to be well below the 100 mSv regulatory limit over a defined five-year dosimetry period of 2016 to 2020.

Three radiation protection-related action level exceedances were reported in 2019 at uranium processing facilities. This slide depicts two of these exceedances, which occurred at the Blind River Refinery.

A worker's dosimeter recorded whole body and skin doses of 0.72 mSv and 13.62 mSv respectively during the wearing period for the second quarter of 2019. These doses exceeded the action levels for quarterly whole-body dose and skin dose.

Following Cameco’s investigation into the action level exceedances, it was determined that the exposures were mostly non-personal in nature. The dosimeter had been lost in a processing area for a period of time, where it was exposed to radiation. When the dosimeter was found, it was returned to the dosimeter storage rack and the dose was recorded in the National Dose Registry, or NDR.

Cameco reviewed the worker’s work practices during the quarter, and developed a more reasonable dose estimate. They subsequently pursued a dose change within the NDR and

established corrective actions to better communication expectations when dosimeters are lost.

CNSC Staff are satisfied with Cameco's corrective actions. Continuing, as depicted on this slide, the third Radiation Protection-related Action Level exceedance in 2019 occurred at the Cameco fuel manufacturing facility.

Specifically, an extremity dose action level of 55 mSv per quarter was reached when a worker's extremity dose for the third quarter was determined to be 73.7 mSv. Cameco's investigation into the exceedance did not identify a clear cause, yet determined that the dose was not possible given the job tasks assigned to the worker, consideration of the worker's past extremity doses, and comparisons with other workers' extremity doses.

CFM has is currently preparing a dose change request for submission to the CNSC. CNSC Staff have been satisfied to date with CFM's investigation and response to this action level exceedance.

Continuing with the radiation protection safety control area, this slide provides a five-year trend of doses to the public from each uranium processing facility from 2015 to 2019.

In summary, doses to the public from all uranium processing facilities continue to be well below the

regulatory limit of 1 mSv per year.

Note that in 2017, Cameco's Port Hope Conversion Facility updated its public dose calculations to change the gamma monitoring location to a fence line which is closer to the operating facility than the previous location, resulting in the increase as shown in this table. This change is value added, as it provides a more conservative dose estimate compared to previous years.

The increase in public dose reflects an update to the public dose calculations and is not the result of an increase in environmental releases or gamma dose from the facility to Port Hope.

Dose to the public has varied at both the Peterborough and Toronto facilities of BWXT from 2015 to2019. In order to calculate the facility contributions to public dose, the results from the background dosimeters are subtracted from the results from the field dosimeters. Typically, the calculated doses are very similar because the contribution of facility activities above background is exceptionally small.

In summary, the maximum effective doses to members of the public are well below the CNSC’s regulatory effective dose limit of 1 mSv per calendar year.

I will now present summary details with respect to the Environmental Protection Safety and Control

areas starting with this diagram, which shows the five-year trend for monitoring uranium in ambient air around uranium processing facilities from 2015 to 2019.

The Ontario Ministry of the Environment, Conservation and Parks, or MECP, quality standard for uranium in ambient air is shown as the green line on the slide, and represents a concentration that is protective against adverse effects on health and the environment, that is, 0.03 µg/m^3.

The monitoring results, which include the highest annual average from each facility's air monitoring stations, indicate that concentrations of uranium in ambient air around these facilities were well below the ambient air quality standard for uranium.

This slide shows a five-year trend for annual average uranium concentrations in soil around uranium processing facilities from 2015 to 2019.

Licensees' soil monitoring programs monitor the long-term environmental effects of air emissions and show whether there is an accumulation of uranium deposited into soil surrounding facilities.

The Canadian Council of Ministers of the Environment, or CCME, guideline for residential and parkland land use is the most conservative soil quality benchmark type of land use available and is therefore shown

on this slide as the green line at 23 µg of uranium per 1 g of soil.

As you can see on this slide, CFM samples soil on a three-year frequency. Appendix Table I-15 of the Regulatory Oversight Report includes additional CFM soil sampling data from 2009 to 2019.

In summary, the soil sampling results in 2019 for all uranium processing facilities continue to indicate that current uranium in soil concentrations are well below the guideline and do not pose a risk to people or the
environment.

With respect to Environmental Protection-related Action Level exceedances to air, as reported in 2019, Cameco's Port Hope Conversion Facility reported a fluoride measurement of 266 g of hydrogen fluoride, or HF, per hour which exceeds the action level set for this facility of 230 g of HF per hour.

The action level was exceeded due to a small leak caused by a seal failure that did not pose a risk to people or the environment.

Cameco immediately isolated the leak, which resulted in fluoride concentrations quickly returning to normal.

CNSC Staff reviewed Cameco's actions,

corrective actions and follow-up, and were satisfied with the actions taken by the licensee.

Continuing with the Environmental Protection-related Action Level exceedances, but turning to water, as reported in 2019, the Cameco Port Hope Conversion Facility reported 18 instances where the daily action level of 100 µg of uranium per litre for uranium discharges from the sanitary sewer were exceeded.

Cameco's investigation into these exceedances attributed this to heavy rainfall leading to groundwater infiltration into sanitary sewer piping, thus augmenting the uranium concentrations in sanitary sewer water.

Releases to the sanitary sewer remained well below the licence limit and, at the reported levels, did not pose a risk to the environment.

Cameco completed the implementation of corrective actions which has helped reduce the number of action level exceedances in 2020, and they continue to repair sections of the sanitary sewer network and are doing upgrades as part of the Vison in Motion project which they spoke to today.

CNSC Staff reviewed and were satisfied with implemented and planned corrective actions taken by the licensee to date.

I will now turn to the Conventional Health and Safety and Control Area.

Lost-time injury, or LTI as noted on the slide, is an injury that takes place at work and results in a worker being unable to return to work for a period of time.

The accident severity rate measures the total number of days lost to injury for every 200,000 person hours worked at a facility.

The number of lost-time injuries and corrective actions taken in response is a key performance indicator for the Conventional Health and Safety Safety and Control Area.

This slide depicts the five-year trend for lost-time injuries at uranium processing facilities.

As shown in this slide, there were no lost-time injuries at a uranium processing facility in 2019.

Over the next few slides, I will briefly point out some highlights about each uranium processing facility.

But first, the following table indicates that, at uranium processing facilities in 2019, there were no changes to facility operations, no licensing decisions made by the Commission, no Licence Conditions Handbook

updates, no regulatory limit exceedances, and no lost-time injuries.

Note that the 22 action level exceedances specified here relating to Cameco's three facilities were discussed in earlier slides.

In summary, all licensees managed operations safely in 2019 and in accordance with their licensing bases.

Twenty Nineteen (2019) highlights for the Blind River Refinery are presented on this slide.

CNSC Staff conducted four inspections at this facility, focusing on the Emergency Management and Fire Protection Safety and Control Area, Packaging and Transport Safety and Control Area, Fitness for Service, and a general inspection which covered multiple safety and control areas.

Blind River refinery had one reportable even in 2019 related to packaging and transport. Cameco reported receiving four drums of uranium ore concentrate with missing drum ring bolts that are necessary to meet the packaging requirements. The producer was informed of the incident and CNSC Staff reviewed Cameco's corrective actions.

CNSC Staff reviewed Cameco's corrective actions following the event and found them to be

acceptable.

Moving on, 2019 highlights for the Port Hope Conversion Facility are presented on this slide.

Staff conducted four inspections which focused on the SCAs of Security, Emergency Management and Fire Protection, and two general inspections which covered multiple SCAs.

In 2019, Cameco reported 13 events. In the reporting to the CNSC, Cameco communicated corrective actions to minimize or prevent reoccurrence. Inspectors also followed up on each reportable event and the corrective actions during subsequent inspections where relevant.

For all reportable events tied to airborne and liquid releases, Cameco reported these events not only to the CNSC but also to the Government of Ontario’s Spills Action Centre.

In summary, Cameco -- Cameco's corrective actions to each of these events as reviewed by CNSC Staff were found to be acceptable, and in all cases, there were no impacts to the environment, the health and safety of workers or the public as a result of these incidences

As was discussed earlier by Cameco, the Vision in Motion project has the aim to clean up and renew the Port Hope Conversation Facility site and its

surroundings.

The VIM project underwent a federal Environmental Assessment. Work is currently being carried out under Cameco's operating licence for the facility, which has a licence condition, 16.1, that requires that:

> "The licensee shall implement and maintain a program to carry out clean-up, decontamination and remediation work."

In 2019, Cameco prepared and transferred stored wastes to the Canadian Nuclear Laboratories Port Hope Area Initiative's Long-Term Waste Management Facility, completed building demolition at Centre Pier and transferred the generated wastes and stored accumulated waste to the CNL waste facility, conducted asbestos abatement and processed hazard removal in Building 27 according to all federal and provincial requirements.

They also began the removal of interior equipment and completed demolition of the tote bin and emergency generator room areas. And CNSC staff verified this during inspections.

Cameco has stopped all operations at Centre Pier, which is no longer considered a licensed area. CNSC inspectors independently verified and confirmed the removal of all Centre Pier demolition and stored waste

during on-site inspections conducted in 2018 and 2019.

At present, Centre Pier is now under the care and control of CNL. It will undergo further remediation of historically contaminated soils and will also be used to support Port Hope Harbour remedial activities by CNL.

Moving on to highlights for the Cameco Fuel Manufacturing facility, Staff conducted three inspections, focusing on the Management System SCA, Emergency Management and Fire Protection SCA, and a general inspection covering multiple SCAs.

In 2019, Cameco had one reported event related to a nitrogen gas leak from equipment located behind its facility. Staff reviewed Cameco's corrective actions following the events and found them to be acceptable.

Finally, 2019 highlights for the BWXT facilities are presented on this slide.

In November 2018, this licensee submitted a licence renewal. CNSC Staff evaluated the application throughout all of 2019 and presented its recommendations to the Commission during the public proceedings held in Toronto and Peterborough in March of 2020.

Back to 2019, Staff conducted three inspections at these facilities, focusing on the Management

System Safety and Control Area, Radiation Protection Safety and Control Area, and a general inspection encompassing multiple SCAs.

BWXT reported two events in accordance with its regulatory reporting requirements in 2019.

One pertained to a personal air sample of an operator that was above the occupational exposure limit. Subsequent investigations by the licensee showed that the local ventilation equipment needed adjustment and was subsequently upgraded to increase capture efficiency.

CNSC Staff reviewed and assessed the improvement made by the licensee and found it to be acceptable to address the issue.

BWXT also reported that a transport truck carrying a consignment of uranium dioxide or UO_2 powder was involved in a minor motor vehicle accident in 2019. There was minor damage to the truck, but no damage to the contents and there was no release of material.

Staff reviewed the licensee's corrective actions in both cases and found them to be acceptable.

This concludes the section for uranium processing facilities. I will now pass along the presentation to Mr. Michael Young.

MR. YOUNG: Thank you,

My name is Michael Young, for the record.

I will be presenting the section on nuclear substance processing facilities.

Nuclear substance processing facilities are different from the uranium processing facilities, as their end products are not related to the nuclear fuel cycle for power reactors. The products created by nuclear substance processing facilities have a variety of end uses such as diagnosing and treating cancer, sterilizing items for sanitary reasons such as surgical gloves, and creating self-luminous emergency and exit signs for buildings and airplanes.

There are three Class IB nuclear substance processing facilities in Canada, all of which are located in the province of Ontario.

SRB Technologies is a gaseous tritium light source manufacturing facility located in Pembroke. Nordion is a health sciences organization that provides products used in the prevention, diagnosis and treatment of disease. Best Theratronics, or BTL, manufactures teletherapy machines, self-shielded irradiators and particle accelerators.

Both Nordion and Best Theratronics are located in Ottawa.

The licence expiry dates and financial guarantee amounts for these facilities are shown on the

table on the slide.

In 2019, CNSC Staff spent a total of 247 person days on licensing activities for the nuclear substance processing facilities, while 267 person days were dedicated to compliance verification activities, including inspections and desktop reviews.

CNSC Staff performed a total of seven compliance verification inspections at these facilities. All identified non-compliances arising from the inspections were recorded and are tracked in the CNSC regulatory information bank.

The table also identifies the trend changes compared to the regulatory oversight activities in 2018. An up arrow indicates an increasing trend, a down arrow indicates a decreasing trend, and a right arrow indicates no change.

Of note is the increasing trend at BTL for licensing activities. This is due to activities associated with the review of BTL's license application for the hearing held in May 2019. For all other facilities, variation is expected to occur from year to year and the trend arrows do not indicate a significant change in regulatory oversight activities.

For 2019, all of the Nuclear Substance Processing Facilities met CNSC requirements and received a

satisfactory rating for all SCAs. These ratings indicate adequate management of safety and control measures at all facilities.

Over the next slides, I will present the performance and trends for the radiation protection and conventional health and safety Safety and Control Areas.

The graph on this slide shows the 2019 average and maximum effective radiation doses to nuclear energy workers for the three facilities. The red line represents the regulatory annual effective dose limit of 50 mSv for a nuclear energy worker. As illustrated, the average and maximum dose received by a worker at each of the facilities was well below the regulatory limit.

This data demonstrates that doses to workers at nuclear substance processing facilities are safe and that the licensee's radiation protection programs remain effective.

The graph on this slide shows the five-year trend for effective doses to nuclear energy workers from 2015 to 2019 for all nuclear substance processing facilities.

The average effective dose per workers for each year are overlaid on the maximum effective dose. For each column, the colour on the lower portion indicates the average effective dose and the colour on the upper portion

indicates the maximum effective dose. The number at the top of each column is the maximum effective dose.

In addition to the annual effective dose limit of 50 mSv in any one year, a regulatory dose limit of 100 mSv over a defined five-year dosimetry period is applied for a nuclear energy worker. As illustrated, doses to workers at all nuclear substance processing facilities were well below the 50 mSv regulatory dose limit in any one year and are on track to remain below the 100 mSv regulatory dose limit over a defined five-year dosimetry period, 2016 to 2020.

No radiation protection action levels were exceeded at any of the nuclear substance processing facilities in 2019.

This slide provides the dose to public from each nuclear substance processing facility from 2015 to 2019.

Doses to the public from all nuclear substance processing facilities continue to be well below the regulatory limit of 1 mSv per year. Note that public dose estimates are not provided for Best Theratronics because its licensed activities involve sealed sources and there are no discharges to the environment that would result in a dose to the public.

Turning to the Conventional Health and

Safety Safety and Control Area, this slide shows the five-year trend for lost-time injuries at nuclear substance processing facilities. The number of lost-time injuries and corrective actions taken in response is a key performance indicator for the Conventional Health and Safety Safety and Control Area.

A Lost-time injury is an injury that takes place at work and results in the worker being unable to return to work for a period of time.

Also covered on the slide, the accident severity rate measures the total number of days lost to injury for every 200,000 person hours worked at the facility, and the accident frequency rate measures the number of lost-time injuries for every 200,000 person hours worked at a facility.

As shown in this slide, in 2019, there were four lost-time injuries at nuclear substance processing facilities. These will be discussed in the next slides.

Nordion reported two lost-time injuries in 2019.

The first was an employee who sustained a low back injury when trying to open double lead doors on a hot cell. The injury resulted in five days' lost time.

The second was an employee who incurred

lower back pain when removing wood bracing from the ground of a sea crate container. The injury resulted in seven days' lost time.

Nordion investigated each incident and implemented corrective actions to prevent recurrence.

CNSC Staff reviewed the corrective actions and are satisfied with the actions taken by Nordion. Best Theratronics reported two lost time injuries at the BTL facility in 2019.

The first was an employee who strained their back when physically moving wooden ramps to loading dock. The second was an employee who cut their hand while working on a product that was not deburred.

In both cases, Best Theratronics conducted investigations and implemented corrective actions to prevent recurrence.

CNSC Staff reviewed the corrective actions and are satisfied with the actions taken by Best Theratronics.

The next few slides will briefly cover the nuclear substance processing facility highlights in 2019.

This table outlines the highlights for nuclear substance processing facilities. There were no changes to facility operations at these facilities in 2019.

Two licensing decisions were made, and

there were three updates to the facility's *Licence Conditions Handbooks*.

All licensees managed operations safely in 2019 and in accordance with their licensing bases.

First, we will look at SRBT.

CNSC staff conducted two inspections in 2019. One was a general inspection covering multiple safety and control areas, and the other was focused on the environmental protection safety and control area.

SRBT reported two events in accordance with CNSC regulatory reporting requirements:

The first event was related to a fire that occurred at a nearby industrial lumber facility, resulting in a loss of power to much of the City of Pembroke, including the SRBT facility. There were no effects on the health and safety of persons or the environment due to this loss of power.

The second event was related to the acceptance of three aircraft signs returned by a customer in the European Union. These signs were previously sold and exported by SRBT in accordance with an export licence issued by the CNSC. The signs did not meet the customer's requirements and SRBT mistakenly accepted their return without having the proper import licence in place. The shipments took place without any incident and there was no

impact to the public or the environment as a result of this event.

CNSC staff reviewed SRBT's corrective actions following the events and found them to be acceptable.

This figure provides the 2019 average groundwater monitoring data near the SRBT facility.

The highest average tritium concentration was reported at 34,592 Bq/L for monitoring well MW06-10, highlighted in yellow on the left-hand side of the slide, and located directly beneath the area where the active ventilation stacks are located at SRBT. It should be noted that none of the monitoring wells for SRBT are used for drinking water.

As can be seen in the figure on the slide, tritium concentrations decrease significantly at locations farther away from the SRBT facility, which is consistent with the air deposition distribution patterns of tritium releases and slow groundwater movement conditions.

Tritium values in monitoring wells located in the residential area are below 200 Bq/L, which is well below the Provincial Drinking Water Standard of 7,000 Bq/L. These residences, as shown in this figure, are connected to the municipal water supply.

Overall, CNSC staff conclude that the

tritium inventory in the groundwater system around the SRBT facility has been trending downward since 2006 and is now stabilized. This trend is due to natural attenuation as well as SRBT's initiatives to reduce emissions, including:

- improved tritium trap valves and remote display units;

- real-time monitoring of gaseous effluent; and

- a reduction in the amount of failed leak tests of manufactured light sources.

CNSC staff conclude that residents in the area and the Muskrat River remain protected.

Next is Nordion.

CNSC staff conducted four inspections in 2019 at Nordion focusing on the security, packaging and transport, and Emergency Management and Fire Protection safety and control areas.

Nordion reported four events at its facility related to packaging and transport in 2019. CNSC staff reviewed Nordion's corrective actions following the events and found them to be acceptable.

Turning to Best Theratronics.

In September 2018, Best Theratronics submitted an application requesting the renewal of its operating licence for a 10-year period. CNSC staff

conducted a review and assessment of the application and the Commission held a public hearing in May 2019. The Commission subsequently renewed Best Theratronics' Class IB licence for a 10-year period in June 2019.

CNSC staff conducted one inspection at Best Theratronics in 2019. This was a general inspection covering multiple safety and control areas.

Best Theratronics reported two events at its facility in accordance with CNSC regulatory reporting requirements.

The first event was related to a false fire alarm at the facility due to an electrical short in the fire safety system by a water leak.

The second event was related to a non-compliant Pre-shipment Notification to an incorrect importing authority.

CNSC staff reviewed Best Theratronics' corrective actions following the events and found them to be acceptable.

This ends the section for nuclear substance processing facilities. I will now pass the presentation back to Dr. Caroline Ducros.

DR. DUCROS: Caroline Ducros, for the record.

CNSC staff confirm that in 2019 licensees

operating uranium and nuclear substance processing facilities in Canada:

- adequately controlled radiation exposures to keep doses as low as reasonably achievable;

- maintained releases to levels protective of the environment;

- continued to protect workers with conventional health and safety programs;

- continued to effectively implement programs in support of all safety and control areas; and

- addressed all areas of non-compliance in a timely manner.

CNSC staff are satisfied that licensees continue to protect the health and safety of workers, the public and the environment.

The following slides present an overview of the CNSC's Participant Funding Program and of the interventions received regarding this Regulatory Oversight Report.

The CNSC's Participant Funding Program supports individuals, not-for-profit organizations and Indigenous group participation in the CNSC's regulatory processes, including participation at Regulatory Oversight Report Commission meetings. The program helps interested parties contribute value-added information to the

Commission.

The CNSC provided funding for participation in this ROR to:

- Curve Lake First Nation;
- Canadian Environmental Law Association;
- Algonquins of Pikwakanagan First Nation;
- Swim Drink Fish Canada/Lake Ontario Waterkeeper; and
- the Algonquins of Ontario.

The CNSC also received written interventions from:

- Canadian Nuclear Laboratories;
- Canadian Nuclear Workers Council; and
- the Municipality of Port Hope.

This slide identifies key themes from the interventions received.

The concerns and recommendations received from intervenors for this Regulatory Oversight Report have been dispositioned in more detail in supplemental CMD 20-M36.B.

We will now provide some concluding remarks.

CNSC staff's regulatory oversight activities confirmed that:

- licensees are taking action in a timely

manner;

- licensees' programs are implemented effectively;

- priority areas using a risk-informed approach and verification activities are maintained; and that

- trends across the uranium and nuclear substance processing facilities demonstrate that the industry continues to operate safely.

The following is an update on COVID-19 for the facilities covered in this ROR.

As indicated by Cameco in its opening remarks, the local health unit servicing the Port Hope area declared an outbreak at the Cameco Fuel Manufacturing Facility on November 27, 2020. CNSC staff were in frequent communication with Cameco as the situation developed. Although facility operations were temporarily suspended while Cameco assessed the situation and conducted rapid follow-up testing, there were no impacts to the maintenance of Cameco's regulatory commitments during this time.

Nordion has had two workers test positive for COVID-19. The two cases were separate instances, months apart, and in each instance there were no subsequent cases. Nordion has protocols in place at the facility to minimize the potential spread of the virus and continues to

follow the guidance from local health authorities.

There were no confirmed cases of COVID-19 reported for the other facilities in this ROR.

For more details on the topic of regulating under COVID-19 restrictions, please refer to CMD 20-M36 that provides information on CNSC's response to COVID-19 and its modified oversight approach for the nuclear fuel cycle program.

As a summary, licensees implemented business continuity plans and shut down non-essential activities.

Where activities continued, enhanced hygiene, screening protocols and physical distancing were implemented, while reducing the onsite workforce to essential workers only.

During this period CNSC staff have and continue:

- to inspect licensees using a combination of remote and onsite methods;

- to conduct desktop reviews of licensee reports and submissions; and

- to remotely engage with applicants and licensees; and

- to remotely engage with Indigenous groups and the public.

This concludes CNSC staff's presentation. We are now available to answer any questions.

Thank you.

THE PRESIDENT: Thank you, CNSC staff for the presentation.

Maybe I will turn to Mr. Leblanc for a moment to give us an update on our webcast of this meeting and some challenges that we encountered.

M. LEBLANC : Merci, Madame la Présidente.

Yes. So I have been informed that some webcast viewers may have had or faced some difficulties in accessing the webcast at 9 o'clock this morning. While the issue was resolved at 9:20, I wish to apologize to those who experienced those difficulties.

The issue was the unavailability of the banner that provides a direct link to the webcast. However, other links to the webcast were available, so hopefully the viewers were able to use those.

If you missed any parts of the meeting this morning, the webcast to be archived soon after the close of the meeting will contain the integrality of the meeting. Again, please accept our apologies in this regard.

Madame la Présidente...?

THE PRESIDENT: Thank you, Marc.

I will now ask the licensees if they would like to make any comments on staff's Regulatory Oversight Report and we will go through -- follow the same order that staff had in their presentation.

So I will start with Cameco Corporation if you would like to make a statement, please.

Mr. Mooney, are you with us?

--- Pause

MR. MOONEY: I'm sorry, I was just rehearsing. In any event, here we go.

Good morning, 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 virtually representing Cameco is Tom Smith, Cameco's Director of Regulatory Compliance and Licensing for our Fuel Services Division, and Rebecca Peters, the Superintendent of Special Projects.

We are joining you as part of your review of CNSC staff's 2019 regulatory oversight review for uranium and nuclear substance processing facilities. We want to take the opportunity to emphasize that Cameco's highest priorities are the safety and health of our workers, members of the public and the environment.

We take great pride in the quality of our processes and programs that support these priorities. Cameco's strong performance is reflected in the 2019 Regulatory Oversight Report. We had satisfactory ratings across all safety and control areas, which is a product of both our people and our robust and mature processes and programs.

As you will have heard, the Vision in Motion project continues to progress. As outlined, the key to the success of this project is a collaborative working relationship that we have with both the Canadian Nuclear Laboratories and the Municipality of Port Hope. Evidence of this cooperative and collaborative relationship can be seen in the correspondence submitted in these proceedings by Mr. Parnell on behalf of CNL and Mayor Sanderson on behalf of the Municipality of Port Hope.

We continue to communicate regularly with the Municipality on our general operations and we provide quarterly environmental monitoring summaries to the Municipal Council. Dale Clark, the Vice President of our Fuel Services Division, also meets regularly with the Mayor to discuss our general operations as well as VIM.

The General Manager of our Blind River Refinery also meets annually with the Town Council in Blind River as well as the Council of the neighbouring

Mississauga First Nation.

Cameco's environmental performance remains strong and we have a culture of continuous improvement that supports our commitment to protecting the environment. In 2019, the Blind River Refinery completed another year of operation with no reportable environmental events and achieved 13 years with no lost time injuries.

Cameco Fuel Manufacturing continued to safely provide fuel for our customers, which accounts for 30 percent of all of Ontario's energy, while delivering reactor components for Ontario's life extension projects.

The Port Hope Conversion Facility continued to operate safely, while transferring eligible wastes to the Long-Term Waste Management Facility.

We are proud to operate in Port Hope and Blind River and take our responsibilities seriously to put people and their well-being first.

We demonstrate our commitment to our communities in a variety of ways, from providing accurate, timely and meaningful information, to supporting and investing in many of the organizations and events that make our community strong.

Our annual public polling results verify that our communities are both well informed and supportive of Cameco's operations. The 2019 polling results confirm

that 91 percent of Port Hope residents support the continuation of Cameco operations and 80 percent agree that Cameco does everything possible to protect people and the environment.

We stagger our polling in Blind River and our last poll in 2018 indicated that 97 percent of all respondents in Blind River support the continuation of Cameco operations and 95 percent agree that Cameco does everything possible to protect people and the environment.

We believe our success in fostering and maintaining these high levels of community support is built on our demonstrated track record of operational excellence and commitment to engagement.

The safety of our workers, their families and their communities is our overriding priority as Cameco addresses the current COVID-19 pandemic. In March of this year we convened our Corporate Crisis Management Team and our operations activated their local business continuity plans. Employees who could work remotely from home did so and all non-essential work was suspended.

In the beginning, the newly implemented screening protocols and other measures put in place to align with government and public health directives made it challenging for us to maintain an adequate workforce at our UF_6 plant. As a result, we made a careful and measured

decision to temporarily suspend production in a safe and planned manner. This decision also impacted our Blind River Refinery since the majority of the UO3 produced there is sent to the UF_6 plant. The two facilities were placed in a safe shutdown state for approximately four weeks.

There is no question that COVID-19 has changed the way we all work and this is true at Cameco. Workers are regularly screened before accessing our facilities, requirements regarding physical distancing and mask usage are in place, and enhanced cleaning and disinfection protocols have been implemented.

Throughout the pandemic we have continued to manage our facilities in a safe manner and have maintained compliance to our regulatory requirements.

There were no cases of COVID-19 at any of our facilities until November, when three confirmed cases were identified at our Cameco Fuel Manufacturing Facility. As a result, an outbreak was declared by the local public health authority. We have been transparent about the situation with the community and have worked closely with our company medical team and public health authorities. We are confident that our protective measures have been effective and that without them more workers would have been impacted. We have taken this opportunity to reinforce the need to follow all our protocols at site.

During these trying times, Cameco has continued to support our local communities. We created a $250,000 COVID-19 Relief Fund which has helped 23 organizations in Northumberland County and 12 in the Blind River area.

Looking forward, we will continue to work with public health experts as well as continuing dialogue with our workforce and use of experience to ensure we have the right measures in place to protect our people.

We will see you next fall regarding the licence renewal of our Blind River Refinery. The strength of our programs and processes allows Blind River to effectively and safely operate during the current licence term. We believe our strong performance supports our request for another 10-year licence term for the Refinery.

I would also like to take a moment to recognize and thank our Blind River Refinery General Manager Chris Astles, who after 37 years with Cameco is retiring in the next few weeks. Under Chris' steady guidance as General Manager, the Refinery has built an impressive safety culture, safely managed through record-breaking production targets, and developed meaningful community relationships. We wish Chris well on his well-deserved retirement.

In closing, I would like to thank CNSC

staff for their work in preparing this report for the Commission in these very challenging times. We remain committed to working hard every day to uphold our commitment to the health and safety of our workers, members of the public and the environment.

Thank you for the opportunity to speak today in relation to staff's report and we are available to respond to questions that you might have for us.

THE PRESIDENT: Thank you, Mr. Mooney.

I will next ask BWXT Nuclear Energy Canada Inc. if they would like to make a statement.

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

My name, for the record, is John MacQuarrie, and I am the President of BWXT Nuclear Energy Canada.

With me virtually from BWXT today are Ted Richardson, who is Director of Fuel Operations; David Snopek, who is Director of Environmental Health and Safety and Regulatory Affairs; and Natalie Cutler, who is Director of Communications and Government Relations.

2019 was a good year for BWXT's licensed operations from an environmental health and safety performance perspective. There were no lost time injuries and no radiation or environmental action levels were

exceeded, and we maintained a satisfactory rating, as determined by CNSC staff, in all safety and control areas.

We also implemented various improvements to our public information program, including addition of dedicated social media channels, hosting virtual community events, conducting public attitude surveys and forming a Community Liaison Committee in Peterborough, in addition to the one that we have in Toronto.

We are pleased to be participating today and are ready to answer any questions that you may have for us.

Thank you.

THE PRESIDENT: Thank you, Mr. MacQuarrie.

I will now ask SRB Technologies (Canada) Inc. if they have any comments to make.

MR. LEVESQUE: Thank you very much.

Stephane Levesque, for the record. I am the President for SRB Technologies and I am joined here today by Jamie MacDonald, Manager of Health Physics and Regulatory Affairs, and Ross Fitzpatrick, Vice President for SRB, to help me answer any questions that you may have.

We concur with the report and all the findings. We are proud of the record that we had for 2019 and since then.

And I would like to say a note. I would

like to thank the CNSC staff and the Commission for their hard work and continuing their work in protecting Canadians and holding these meetings and hearings in these challenging times and technical difficulties. Thank you.

THE PRESIDENT: Thank you, Mr. Levesque.

Nordion (Canada) Inc., any comments from you?

MR. BROOKS: Yes, good morning. Thank you, President Velshi, and good morning, Members of the Commission.

I am Kevin Brooks, I am the President of Nordion.

With me today virtually are my Nordion colleagues: Richard Wassenaar, who is our Director of Regulatory and Environmental Health and Safety; Jennifer Mahoney, who is our Manager of Environmental Health and Safety; and Mr. Paul D'Aubin, who is our Senior Environmental Health and Safety Compliance Specialist.

I would like to take this time to remind the Commission that in August of 2018 Nordion had divested its medical isotope assets to BWXT ITG and in consultation at that time with CNSC we developed a licensing framework that allowed BWXT ITG to perform medical isotope activities as Nordion's subcontractor under Nordion's CNSC regulatory licence. This framework continued through all of 2019. As

such, the compliance report reflects all licensed activities at the facilities here in Ottawa, including those using BWXT ITG as subcontractors.

Nordion is and remains committed to the safeguarding of global health, public health and regulatory excellence, and we believe that this is reflected in our 2019 Oversight Report.

There are two highlights from 2019 I would like to call attention to.

The first is Nordion conducted a full-scale emergency response exercise on June 21, 2019, with the participation of the Ottawa Fire Services. The exercise went very well and demonstrated that Nordion employees were well trained and are prepared to respond to that type of emergency.

Second is that Nordion participated in the CNSC-requested Integrated Regulatory Review Service Mission with the IAEA. Through this, the CNSC conducted a transport inspection of Nordion on September 5, 2019, and the inspection appeared to go well and we understand that it reflected both well on the CNSC and Nordion with the IAEA.

Nordion continues to operate in compliance with our licence and I would like to take the opportunity to turn it back over to you, President Velshi.

THE PRESIDENT: Great. Thank you, Mr. Brooks, for your comments.

And I will now ask Best Theratronics Ltd. if they have a statement to make.

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

My name is Edna Sacay and I am the Radiation Safety Officer from Best Theratronics.

To ensure the safety of our workers, the public and protection of the environment, we are committed to the continuous improvement of our programs in collaboration with the CNSC and interested stakeholders.

In response to the COVID-19 pandemic, Best Theratronics has implemented additional safety measures and policies, taking into consideration recommendations provided from all levels of public health organizations. Open communication efforts and additional sanitization resources were provided to our workers to ensure our workers felt safe when returning to essential work onsite.

I am appreciative of this opportunity to speak to you all and am available to answer questions that the Commission may have.

THE PRESIDENT: Great. Thank you very much, Ms Sacay.

We will now take a break and we will

resume the meeting at 11 o'clock. So we will see you then.

Thank you.

--- Upon recessing at 10:38 a.m. /
Suspension à 10 h 38
--- Upon resuming at 11:00 a.m. /
Reprise à 11 h 00

THE PRESIDENT: Welcome back, everyone.

We will now proceed with submissions filed by intervenors, beginning with the oral presentation from the Algonquins of Pikwakanagan First Nation, as outlined in CMDs 20-M36.5 and 20-M36.5A.

I see that we have Ms Amanda Two-Axe Kohoko with us and I will turn the floor over to you, Ms Kohoko.

CMD 20-M36.5/20-M36.5A
Oral presentation by the
Algonquins of Pikwakanagan First Nation

MS TWO-AXE KOHOKO: Hi, everyone. Just one second.

--- Pause

MS TWO-AXE KOHOKO: Hi. Can everybody

hear me okay?

THE PRESIDENT: Yes, we can.

MS TWO-AXE KOHOKO: Okay.

My name is Amanda Two-Axe Kohoko and I am the Consultation Coordinator for the Algonquins of Pikwakanagan First Nation.

I will be presenting a presentation on behalf of the Algonquins of Pikwakanagan First Nation.

I also have on the call with me Katy Dimmer, who is a consultant who -- well, a First Nations consultant who provided technical assistance in regards to this review.

Next slide, please.

Okay. So the Algonquins of Pikwakanagan First Nation represent the rights and interests of our First Nation members in our traditional territory. AOPFN is currently working toward negotiating and achieving a final land claim agreement and settlement between the Ontario and Canada governments. We remain mindful that regardless of any outcomes of that effort that the First Nation must be prepared to independently act in support of its members' interests and needs.

As our First Nation community is a recognized Indian Band under the *Indian Act*, it is our responsibility to act responsibly and take this obligation

seriously, and therefore, projects within the Algonquins of Pikwakanagan traditional territory require full, direct engagement and accommodation of the First Nation rights.

Also, to acknowledge that the Algonquins of Pikwakanagan First Nation members are active harvesters across the traditional territory and rely on species, including large mammal animals, birds, fish for consumption and cultural use. AOPFN members are concerned about the projects and their separate and combined long-term effects on the environment and on the resources that they rely on. It is critical to understand that the consent to build and operate these facilities within the First Nation's traditional territory was never sought. AOPFN is seeking greater participation and collaboration on facility activities with both the licensees and CNSC going forward.

Next slide, please.

So this is a beautiful picture of my community. It is a picture of the First Nation Reserve.

First, a little bit of background. The First Nation Reserve was formerly known as the Golden Lake Reserve No. 39. It was established in 1873 after the First Nation petitioned several times for our own land.

The following presentation by the Algonquins of Pikwakanagan First Nation is on comments on the Regulatory Oversight Report for the Uranium and Nuclear

Substance Processing Facilities in Canada 2019, the Report.

The First Nation has received participation funding from CNSC to prepare this presentation and with technical support from the Firelight Group.

The following facilities discussed in section 3.0 of the report are located within the traditional territory of the Algonquins of Pikwakanagan First Nation and have the potential to be directly impacted by the lands of the First Nation.

Next slide, please.

The First Nation has indigenous knowledge and community insight relevant to the mentioned projects, as well as interests in potential project impacts on their lands, and therefore is seeking deeper meaningful engagement with the licensees and CNSC through this submission.

Next slide.

AOPFN has reviewed the report and undertaken a deeper review of the following report sections in preparation of this presentation.

So we reviewed section 3.0, which is the Nuclear Substance Processing Facilities; section 4.0, the CNSC Regulatory Oversight; section 6.3, Indigenous Consultation and Engagement; section 6.4, CNSC Independent

Environmental and Monitoring Program.

Next slide, please.

So this slide is a summary of the First Nation recommendations. I am going to ask to go to the next slide because I am going to be describing each recommendation through the next few slides.

Recommendation number one is CNSC Regulatory Oversight and Indigenous Knowledge.

Our review is neither the report nor the presentation provided evidence that indigenous knowledge was sought through the regulatory oversight of the facilities; 14 safety and control areas used to evaluate projects do not include steps for collecting and considering indigenous knowledge.

Next slide, please.

Recommendation 1: CNSC work with the First Nation and other Indigenous groups to develop methods for the meaningful inclusion of indigenous knowledge in regulatory oversight processes.

Next slide.

Recommendations 2 and 3 in regards to Indigenous Consultation and Engagement.

The First Nation was encouraged by participant funding to participate in the review of Report.

There are opportunities for greater

indigenous involvement in the regulatory processes.

The First Nation is seeking involvement and engagement through the entire lifecycle of the projects, which includes participation in monitoring and regulatory oversight.

CNSC staff engagement has improved over time, but it could be better.

Next slide.

Recommendation 2: CNSC work with the First Nation to identify more frequent and funded engagement opportunities, including involvement of the First Nation Knowledge Keepers or the First Nation Advisory Committee Members and the First Nation leadership, concerning nuclear substance processing facilities within the First Nation traditional territory.

Recommendation 3: CNSC work with Indigenous groups to improve transparency and methods for accessing funding for post-environmental assessment engagement activities such as monitoring.

Next slide, please.

Recommendation 4: Indigenous Consultation and Engagement.

Evaluation of indigenous engagement must be strengthened as part of regulatory oversight.

Move from assessing if engagement was done

to how well it was done and whether it meets indigenous expectations.

Meaningful engagement with a licensee for AOPFN would include:

- increased engagement on project operations and discussions of real benefits and opportunities for First Nation members -- that includes identifying the challenges that First Nation members have;

- better effort to seek input on how the First Nation wants to be involved in the facilities and be open to collaborative input on engagement activities;

- provide the funding required for real and meaningful participation in engagement activities, including the provision of funding for indigenous knowledge studies;

- provide adequate time to review and comment on project-related documents.

Next slide, please.

Recommendation 4: CNSC work with indigenous groups to develop indicators and metrics for reviewing effective indigenous engagement.

Next slide, please.

Recommendations 5 and 6: CNSC Monitoring Programs on the IEMP.

The First Nation would like to see

discussion of indigenous participation in the Independent Environmental Monitoring Program in all future Regulatory Oversight Reports.

There should be more opportunities for indigenous knowledge keepers to be involved in sampling and monitoring activities as part of CNSC's IEMP program.

Next slide, please.

Recommendation 5: Reporting on indigenous participation in the IEMP in all future Regulatory Oversight Reports.

Recommendation 6: CNSC further engage with the First Nation on funded opportunities for the First Nation participation in the IEMP program.

Next slide.

Recommendation 7: CNSC Monitoring Programs.

The Report does not include the First Nation involvement nor indigenous participation in CNSC's compliance and verification monitoring of the facilities.

Canadian Energy Regulator is making steps to include indigenous monitors in their compliance program. The CNSC should follow this example.

Providing funding for and working with indigenous groups to develop roles for indigenous monitoring in CNSC monitoring would improve consideration

of indigenous knowledge in regulatory decisions.

Next slide, please.

Conclusion. The First Nation would like to see more opportunities for indigenous involvement in CNSC regulatory oversight beyond reviewing reports. The First Nation has submitted seven recommendations to address the concerns concerning indigenous knowledge, indigenous engagement and monitoring.

Meegwetch.

THE PRESIDENT: Thank you. Thank you for your submission and your oral presentation, Ms Kohoko.

I will open the floor for questions and I will start with Dr. Demeter, please.

MEMBER DEMETER: Thank you very much, Ms Kohoko, for that presentation.

I will start with a general observation that runs through indigenous peoples' interventions about the continued need to improve communications and involvement, especially meaningful participatory involvement, which I heard as a theme through many of the interventions.

I wanted to ask staff, and perhaps Cameco, how do you intend to maintain or improve, continually improve indigenous engagement, meaningful participation during the next year when things are going to be -- as we

deal with COVID and it's winding down and it's vaccine coming in spits and spurts, it is probably going to be a year. Are there any special strategies you have to maintain engagement and participation during COVID times?

DR. DUCROS: Caroline Ducros, for the record.

I would like to pass this question to the International Relations Team.

MR. LEVINE: Thank you, Caroline.

This is Adam Levine, Team Lead, Indigenous Relations and Participant Funding, for the record.

So first I just want to say that I am very proud of all the work that we have been doing with the Algonquins of Pikwakanagan First Nation and Amanda directly. We meet with the AOFPN quite regularly, especially on the ongoing projects at the Chalk River site from CNL, and we have really started to develop that relationship and work through a lot of these concerns and issues that have been raised in the intervention.

In terms of ongoing engagement during the time of COVID and post-COVID, we are working directly with each community to find the best way to continue that information flow and communications going during this time. So right now we are doing all meetings of course virtually and doing a lot of correspondence via e-mail, but we are

looking into the new year to see if there are ways for us to continue to engage both leadership but also community members, and I think there are a number of ways to do that, like webinars that we have held. Also, Amanda has created an Advisory Committee made up of community leaders and community members that are going to be continuously involved in the engagement and consultation work to ensure that their community continues to receive information and be involved.

So we are really trying to adapt to the situation and we are hoping that in 2021 we can actually be welcomed back into the community in person, because that really is the best way to engage and build relationships.

THE PRESIDENT: Thank you, Mr. Levine.

Dr. Demeter, we will hold off responses from the licensees, because -- unless you want to hear from SRBT, Nordion or BTL in particular that are on the indigenous lands of the Algonquins of Pikwakanagan.

MEMBER DEMETER: No, that's fine. I think that is a good -- I might have a specific question for them based on another intervention.

THE PRESIDENT: Okay. Thank you.

Then moving on to Dr. Berube...?

MEMBER BERUBE: Yes. Good morning, Amanda, and thank you for that presentation. It is

visually stunning. It is probably one of the nicest I have seen since I have been sitting, so thank you for putting the extra effort in that.

One of the questions I have for you specifically has to do with the inclusion of indigenous knowledge. Obviously, there is some struggle with indigenous knowledge because it varies from Band to Band and from Nation to Nation, and even from indigenous group to indigenous group. As you know, just about everybody is a little bit different and their understanding of indigenous knowledge is different.

If you could, in your own words, just give us some sense of what you consider to be important indigenous knowledge that needs to be included at this point.

MS TWO-AXE KOHOKO: Yes. Thanks for that question.

Yes, so indigenous knowledge, the term is for all indigenous people. So what I would be, and the community would be, speaking on is specifically to Algonquin knowledge. It really depends on the First Nation priorities and values that are identified, which is why it is different and unique between each First Nation community.

So because we are in the Algonquin

traditional territory, we would look for knowledge specific to the Algonquin people. So if we were in a different traditional territory, you would seek knowledge in that traditional territory as well. So it really depends.

You would have to directly engage the First Nation. We have to review materials provided and then that way we could determine what values are important to the First Nation and priorities. So that would be my response.

And I just wanted to say a quick comment to the first question that was asked in regards to COVID restrictions and how we are engaging that Adam mentioned.

So one of the challenges I just want to identify as well is now that we are doing community engagement through virtual methods like Zoom, Microsoft Office Teams and Skype to meet with the community members, we are having challenges with the WiFi and the First Nation having the equipment to set up and provide that capacity to meet virtually. So that is one of the challenges I have been trying to deal with for the last five months, having the equipment and the WiFi capacity to set up those virtual meetings. And it takes about 15-20 minutes before we get it going right. So I just want to -- that is a challenge that I am facing here. I can't imagine the challenges of other First Nations communities who are also dealing with

virtual methods. Thank you.

MEMBER BERUBE: And could I just ask CNSC, how are you trapping indigenous knowledge, knowing that it is super diverse a topic? Do you have a matrix that you are working on? How are you actually pulling together that information and trying to understand the core issues that need to be addressed here?

DR. DUCROS: Caroline Ducros, for the record.

I will pass it back to the International Relations Team to discuss how we are trying to improve the incorporation of Indigenous knowledge.

MR. LEVINE: Thank you. Adam Levine, for the record.

So we just recently developed an Indigenous Knowledge Policy Framework and we sent that for review and comment to Amanda and her team, as well as all the indigenous groups we work closely with across the country. This is based off of the last couple of years of work also at the federal level where the Impact Assessment Agency, among other departments and agencies, is developing a federal framework on the integration and protection of indigenous knowledge.

So our policy really mirrors that and really tries to focus on working directly with communities

to find out what type of knowledge and information they would like to share with us and how we best incorporate that into the work we do in a respectful way. Because you can't just take indigenous knowledge out of where it comes from in terms of the culture and worldview and directly input it into Western science, but there is a lot of complementary information that really helps to improve our understanding of the environment, not only what is important to communities in terms of their traditional activities but their viewpoints on oversight of projects, the development of projects and the environmental assessment process.

So we are really trying to work with each community to develop a framework and agreements on how we share knowledge, how we incorporate it and how we do that throughout the regulatory process.

A great example of that is the Independent Environmental Monitoring Program, where we are always looking to work with communities to incorporate their valued components and perspectives on locations to sample, et cetera, to ensure it is meaningful for them.

So like Amanda said, it has to be community-specific and it has to be respectful of the knowledge holders as it is their knowledge.

THE PRESIDENT: Thank you.

Dr. Lacroix...?

MEMBER LACROIX: Thank you very much. Thank you very much, Mrs. Kohoko, for this presentation. It was quite interesting.

To pursue on the question posed by Dr. Berube, I have an idea, but I still don't understand what exactly we mean by indigenous knowledge. Mr. Levine pointed out that we have been trained -- well, we have been trained in Western science and I know the importance of including integrating the indigenous knowledge, but what is it exactly from a practical point of view, from a safety point of view, from protecting the environment? What do we mean by "indigenous knowledge"?

MS TWO-AXE KOHOKO: Yes. Great question.

So I am just going to try to explain what indigenous knowledge is. To indigenous people, indigenous knowledge would be like if we go out on the land in the proposed project area, what would be indigenous knowledge to us is, you know, what does this smell like, what are the birds saying, what are we hearing when we are out on the land. That is indigenous knowledge.

Other indigenous knowledge includes oral stories that were passed down by generation to generation. So there is indigenous knowledge where we have prophecies, we can call them, where we talk -- our ancestors told us,

you know, about Mother Earth and the Creator, you know, certain things about respect, honouring our land, honouring the animals, the plants, the water. Those are all types of traditional knowledge. So it really depends on who you are engaging with and how they would like to interpret their knowledge.

So there are those traditional stories, storytelling, and then we are looking at, you know, reviewing materials, which is like actual paper, and trying to interpret that, what is missing that is something that we have learned that can be included and considered as indigenous knowledge. And that is how we kind of pass that information to you. So it is about, you know, seeing, hearing, smelling the smells, those are types of indigenous knowledge.

MEMBER LACROIX: Well, that's great. Thank you. I really appreciate that.

So the challenge is to translate this knowledge into eventually a regulation or formal procedure?

MS DIMMER: If I may jump in here. I am here supporting AOPFN and Amanda today.

Amanda raised in her presentation just sort of an example that we've seen elsewhere from another regulator, that it's our understanding that the CER, how they're trying to approach this right now, it's still in

the preliminary stages, but they're holding workshops and training opportunities between staff and knowledge holders on the land. So there's two-way learning. So staff show how they monitor the land, and knowledge holders at the same time teach staff how they monitor the land through their traditional knowledge.

MEMBER LACROIX: Thank you, thank you. I appreciate.

THE PRESIDENT: Thank you.

Dr. McKinnon?

MEMBER McKINNON: Yes, thank you, Amanda, for the intervention.

I have a question for CNSC staff, and it's in connection with Indigenous engagement. And there's often in various intervenors there's this issue of how successful was the intervention. And there was a statement in the written intervention which I think articulated this very clearly, which said:

> "Based on our review of section 6.3.2 it appears that CNSC staff only confirmed that the licensees have Indigenous engagement and outreach programs and did not review or report on the implementation or success of those programs."

And it was also mentioned in the recommendations to develop metrics for measuring effectiveness.

So the question is -- and this is a recurring theme -- is there any known method of quantifying or developing a ranking system for successful engagement besides just the number of engagements or a checklist? Is this something that could be developed in consultation with First Nations groups?

DR. DUCROS: Caroline Ducros, for the record.

I'll pass it to the Indigenous Relations Group to address how that is done.

MR. LEVINE: Thank you.

Adam Levine, for the record.

So first, I just want to explain that how we arrive at our conclusions around our assessment in the REGDOC or the regulatory oversight report in terms of licensees' engagement activities. So currently, as part of the public information and disclosure program, each licensee is required to identify key audience, target audiences, and Indigenous groups are definitely a key audience member for ongoing communications and engagement.

And licensees include information on their engagement activities in their annual compliance reports that are submitted to CNSC staff for review. So our team

reviews that to ensure that they're continuing to engage and disseminate information to the key Indigenous groups that are part of their target audience and also ongoing communications with Indigenous groups as well to hear about how things are going. And if we hear that they're missing information or haven't heard from a particular licensee for a while, if that's the case, we make sure they're put in contact and try to keep those communication lines open.

And in addition to that, in terms of actual metrics and how we identify that, there's no one common standard that we can apply in this sphere. I mean you can do polling; there's other things that you can do to really get a sense of a community's sense of interest and how they're feeling in terms of the information, but the key is the relationship. As Amanda and I were talking on a regular basis, you can get a good sense of how the community is feeling, how they feel the communication and engagement and relationship is with the licensee or proponent and make adjustments as we go. So it's really qualitative data in that sense.

But one thing that we're looking to do in the next year is start looking at revising and updating our REGDOC-3.2.2 on Indigenous Engagement and looking for better ways to capture some of these things we hear in many interventions from Indigenous groups and work with them

directly on finding out what could work and what we can improve on moving forward.

Thank you.

THE PRESIDENT: And maybe I'll follow up with some of your comments, Mr. Levine.

Are we in the process of setting up a formal agreement with Amanda's group?

MR. LEVINE: Thank you. Adam Levine, for the record.

So yes, currently -- the majority of our work with AOPFN is on the ongoing environmental assessments occurring within their territory. And we're in the process of finalizing a terms of reference for consultation specifically to those projects. So it's an agreement on the approach to consultation and the development of a rights impact assessment framework with them as well.

In terms of ongoing engagement, we've already begun the discussions and presented to Amanda and her team the idea of developing a long-term engagement terms of reference where we could have a work plan and really develop that collaborative relationship we're hoping for and address a lot of the things that Amanda has raised today.

So that is definitely in the works and a plan we want to have moving forward, but in terms of

capacity and ability to get that done, our focus is on the environmental assessments right now, and we'll keep that in mind moving forward.

THE PRESIDENT: Thank you. And maybe a question for you, Amanda. One is staff, after having seen the interventions, submitted a supplementary CMD on their response to the interventions. Did you get a chance to look at staff's response to your recommendations?

MS TWO-AXE KOHOKO: No, I have not had a chance to review those responses.

THE PRESIDENT: Yeah. If you had, I just wanted to get your reaction to that.

And your recommendations were very much aimed at the CNSC. Anything for the licensees?

MS TWO-AXE KOHOKO: That's a great question. Let me just think on that for one second.

I do believe that there should also be direct engagement between the First Nation and the licensee as well. And I know we've had -- we are having those initial discussions.

I guess the other challenging part is the workload that comes with engaging on these projects for the First Nation. So that's also another challenging part on behalf of the First Nation.

I guess I think that's it that I have.

THE PRESIDENT: Okay, thank you.

MS DIMMER: Actually, if I may -- pardon me, if I may add just quickly ...?

THE PRESIDENT: Go ahead.

MS DIMMER: Just it was also raised in the written submission as well that not only better direct engagement but also there could be improvements in seeking or understanding what the nation needs. So rather than coming at the end of the year to ask if they want to participate in, say, fish sampling, rather be more forthright in early planning to see maybe it's not fish planning that the nation is primarily concerned of, maybe it's water, maybe it's something else.

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

Either of you have any final comments before we move to our next intervention? Ms Kohoko or Ms Dimmer?

MS TWO-AXE KOHOKO: So my only other comment is I think it's also important that these facilities that are -- or other facilities in other traditional territory -- that there is an acknowledgment of the traditional territory and the lands that these projects are on. So I'd just like just to recognize that.

But I'd also like to say thank you and

(native language spoken / langue autochtone parlée) for allowing me to do this presentation.

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

So with that, we'll now move over to our written submissions.

And before I turn the floor over to Marc to guide us through the written submissions, there is a statement I'd like to make, which is that some interventions have commented and made recommendations on the content, format, and process around regulatory oversight reports. Now I just want to let you know the Commission does take good notes on these constructive recommendations.

For this particular meeting, we do not intend to focus on these comments, given the process that staff is going to initiate in the New Year around the whole regulatory oversight review process. And we've seen from staff's submission that they're going to be issuing a discussion paper in January. So the Commission is looking forward to hearing from staff on their recommendations, and I'll get staff to comment on this, but I suspect the 2020 report will look quite similar to the 2019 report because there may not be enough time to incorporate any recommendations that come from this review process. But

we'll hear from staff on that.

So with that, maybe Marc, I'll turn it over to you to guide us through the written submissions, please.

MR. LEBLANC: Thank you, Madame la Présidente.

CMD 20-M36.2
Written submission from the
Curve Lake First Nation

MR. LEBLANC: So the first written submission is from the Curve Lake First Nation, as outlined in CMD 20-M36.2. And I'd like to ask if there's any questions from the Commission Members on this submission.

Dr. Demeter?

MEMBER DEMETER: Thank you very much.

In the intervention, the Curve Lake First Nation makes the statement that:

> "[Curve Lake First Nation] is unfamiliar with the Vision in Motion Project."

So I'd like to sort of ask Cameco or CNSC what outreach they've had about this particular project with this group or is this group -- is it in the territory?

What's the disconnect here, if they say they didn't know about the project and it seems to be something that's been going on for a number of years.

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

For Cameco, our target audience includes the local communities in which we operate, and for the conversion facility where the Vision In Motion project is taking place primarily, the Williams Treaty First Nation, which includes Curve Lake First Nation, are part of our primary target audience.

We sent numerous pieces of correspondence to the Curve Lake First Nation as part of the outreach for the VIM comprehensive study, environmental assessments from 2007 to 2010.

And then as part of our relicensing efforts in 2016, we reached out again and provided a description of the Vision In Motion project.

And then most recently, as Mr. Smith had alluded to, we've updated our public information program and we sent a letter just recently that provided notification of the planned relicensing of the Cameco Fuel Manufacturing Facility, but also provided our newsletters, our compliance reports, and quarterly reports for both CFM and Conversion.

In our latest iteration of our public information program, we've committed to provide the Indigenous groups in our primary target audience with an annual letter or email to determine interest in further engagement and including meetings and/or facility tours, our "Energize" newsletter, copies of our quarter and annual reports, invitations to any Cameco-led activities, and information about any licensing activities.

MR. LEBLANC: President Velshi?

THE PRESIDENT: And maybe, Mr. Mooney, you can elaborate on the communication, because one of the other concerns or suggestions that has been raised is additional information about reportable events. And I know there are other intervenors who have also talked about the level of detail that's provided and that the ease with which they can get access to that information. Is that something that you're also contemplating doing, is providing that information to them?

MR. MOONEY: Thank you for that.

Right now, what we've done over the last number of years is enhance our public reporting, and that includes responding to meaningful feedback from stakeholders. The Swim Fish Drink Ontario intervention notes that in 2020, although this is a 2019 report, we did make an effort to fill in the concerns that were raised

about our events posted that weren't necessarily in the 2019 posted events. But one of the pieces that we do intend is to add contact information so if a member of the public wants to ask questions, then information to do is easy to locate.

I think another piece of information in that regard is that we have been posting for a number of years, and we haven't received any inquiries on the postings that we've made in relation to the events.

So yes, there's some improvement and improvements have been made based on the feedback, but overall, we have improved the posting and generally satisfied the public's interest in those events.

THE PRESIDENT: Thank you.

MR. LEBLANC: So I'm just looking if there's any additional raised hands from the Commission Members. And I don't see any, so we'll proceed to the next submission.

CMD 20-M36.3

Written submission from the

Canadian Nuclear Laboratories

MR. LEBLANC: So the next submission is from the Canadian Nuclear Laboratories as outlined in CMD

20-M36.3.

Any questions from the Commission Members? Dr. Lacroix?

MEMBER LACROIX: Yes, thank you.

I do understand that CNL is implementing the Port Hope Area Initiative and Cameco is dealing with the VIM, Vision In Motion program. And both teams have been working together for a number of years. And now I'd like to know more about their cooperation. Could you say a few words, Mr. Mooney, on this?

THE PRESIDENT: Mr. Mooney, I think you're on mute.

MR. LEBLANC: Yes.

MR. MOONEY: Yes. Sorry. Sorry, thanks. Yes, so the second time I'll be better than the first.

Yes, we do have a strong working relationship with the Canadian Nuclear Laboratories. And I thought that maybe Tom Smith, who's on the ground and has been involved with Vision In Motion since very early days, particularly the environmental assessments, could provide some further colour on that. So I'd like to just ask Tom to provide a bit of commentary in response to your question, Member Lacroix.

MR. SMITH: For the record, Tom Smith, director, Regulatory Compliance and Licensing, Cameco's

Fuel Services Division.

Thank you for your question. We do have a very good working relationship with both CNL and the Municipality of Port Hope. There are weekly meetings between Cameco and CNL. Cameco has a designated stakeholder relations individual who carries forward all the dialogue between Cameco and CNL. We also have larger meetings from time to time. We haven't been able to have them as of late because of COVID-19, but we're in frequent communication, both at that level and then direct dialogue between my team and the operators of the LTW, and that's in terms of the waste shipment. So we've been working with CNL now for well over a decade. It's a very polished and good working relationship.

MEMBER LACROIX: Thank you for the answer. Thank you.

MR. LEBLANC: Thank you. I'm just again looking for any raised hands from the Commission Members. And Dr. Berube?

MEMBER BERUBE: Yes, I'd like to thank the intervenor for this intervention.

And specifically I'm curious about the Centre Pier project that's ongoing right now. I know Cameco has just handed it over to CNL for remediation activities, but could somebody from Cameco -- I don't know

if there's anybody from CNL on or not -- but if not, can somebody from Cameco give me an idea, you know, where is that project headed in the end? Is that going back to the Municipality for general use? Or where is the end point on that? And if CNSC could speak to how does that process move from where it is now to wherever that end point is.

MR. LEBLANC: So if we can start with Cameco please. Mr. Mooney? You're again muted.

MR. MOONEY: Yeah. Yeah. I've got two buttons here, and I keep pressing one but not both.

In any event, I was just saying that I'd like to pass this on to Tom if I don't answer it completely.

But Dr. Berube, we no longer have care and control of the Centre Pier property. It was passed on to CNL in June of 2019. It is under their CNSC licence.

The transfer of the material took place off the Centre Pier from June 2018 to March 2019, and then the demolition that you saw took place between March 2019 and May 2019 with disposal to the LTW and that completed in June of 2019.

So there's a federal-provincial-municipal agreement -- sorry, federal-municipal agreement that established the Port Hope Area Initiative, and under that there's different responsibilities for the remaining work

on the Centre Pier. Right now, the Centre Pier is being used by CNL for the planned remediation of the harbour works. And after that, there's some soil remediation that will take place on the Centre Pier before ultimately I think that the vision is that it returns to the landowner, which is the Municipality of Port Hope.

MR. LEBLANC: Thank you. CNSC staff?

DR. DUCROS: Caroline Ducros, for the record. I'll pass it to the project officer responsible for the Port Hope Conversion Facility, Mr. John Thelen. And just wanted to let you know that I understand that CNL is on the line.

MR. THELEN: John Thelen, senior project officer and inspector, for the record.

Just to give a bit of context, the Port Hope Centre Pier, as was mentioned by Mr. Mooney, is a municipal-owned waterfront property that's been leased to Cameco for the purposes of storing historic wastes associated with the Eldorado Mining refining operations that were generated back between 1933 and 1988. And they were stored in Buildings 40, 41, and 43 at Centre Pier. And as Cameco has mentioned today, those buildings were demolished and that waste has been transferred to the Long-Term Waste Management Facility managed by CNL.

There still is underlying contaminated

soils related to historical activities that need to be remediated at Centre Pier, and so there's a coordinated effort underway between inspectors in the Nuclear Processing Facilities Division responsible for Cameco's licence and the Canadian Nuclear Laboratory Regulatory Program Division that's responsible for the CNL licence to work together, harmonize together to accomplish -- to ensure those interrelated remediation goals are being done appropriately.

So some of the next steps, we're continuing to provide regulatory oversight. We've provided regulatory oversight during the work that's been done so far. Cameco's continuing with VIM activities at their main site in Port Hope.

But an important note here is that CNL's harbour remediation activities are yet to be done. So it's important for remediation activities to be completed before remediating the remaining contaminated soil at Centre Pier. And I know that CNL will be present -- will be part of a public Commission meeting two days from now and they'll be speaking to some of these activities as well.

MR. LEBLANC: Thank you.

So is there any other raised hands?

CMD 20-M36.4

Written submission from the

Canadian Environmental Law Association

MR. LEBLANC: As I'm not seeing any, we will proceed to the next submission, which is from the Canadian Environmental Law Association, or CELA, as outlined in CMD 20-M36.4.

Any questions from the Members on this submission? Dr. Demeter?

MEMBER DEMETER: Just actually just a comment to concur with CELA. I also really appreciated the presentation of averages and max in that format. I think it was really useful to get a sense of not only the sort of the mean but it also gives some comfort in knowing what the maximum dose is within that parameter. So just a comment that I appreciated that information presented that way.

MR. LEBLANC: Thank you.

Any further questions? Dr. McKinnon?

MEMBER McKINNON: Yes, thank you.

I'll raise a point which has come up with other intervenors but was mentioned by CELA specifically, and it was in connection with how it's not clear how action levels are set, and it was really in connection with there was some concern that if there are no exceedances, it may

indicate that the action levels are set too high.

So for the record, could staff just describe how the action levels are actually set, if there's a general principle for that?

DR. DUCROS: Caroline Ducros, for the record. Yes, there is, and I'll pass the mic to the Health Sciences and Environmental Compliance Division to explain.

MS SAUVÉ: Good morning. Kiza Sauvé, for the record.

I'll provide an environmental protection review of action levels, and if you'd like to hear about radiation protection, we can provide that as well.

So action levels are an indication whether there is a loss of control of an aspect of an operation. The licensees are all revising their action levels right now or have already revised them to be in accordance with CSA N288.8, and so that's the Establishing and Implementing Action Levels for Releases to the Environment from Nuclear Facilities.

These action levels are set, performance based, and it involves, as we saw on the CNSC presentation -- it's kind of at the upper limit of regular operations.

We do expect them to be exceeded, you know, once or twice a licence period, so not that often.

And the intervenor is correct. There are some licensees where we haven't seen an exceedance, and those are the ones that we're looking at, you know, as we go through the cyclical review of action levels to ensure that they are set at a level where we will see exceedances, rarely, but maybe once in a while.

And then it's always important to remind ourselves that action levels are not -- or an exceedance of an action level is not -- I'm missing my words -- is not -- I'm sorry -- is not a regulatory infraction, but it is a reportable event, so licensees are expected to report and then tell CNSC Staff how they will correct it or what they'll do with that.

So I will turn to radiation protection, Ms Caroline Purvis, if she'd like -- Caroline Purvis, if she'd like to add about radiation protection action levels.

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

I think similar concepts can be applied to the radiation protection sphere.

I think, starting off with, it's important to note it's the licensees that identify the parameters that they wish to use as timely indicators of potential changes to the program performance. They'll look at their

operational history for that parameter. For example, dose, for example, is one parameter that's often used, worker dose, and then they will set it based on historical practices, their current operational activities and at a level which is at the upper bounds of normal operations.

I believe Ms Sauve indicated that they're -- they're meant to be fluid, so over time if there's a change in operation, a change in operational activities or you moving, for example, from an operation phase to decommissioning, that would trigger a review of the action levels to ensure that they continue to remain meaningful in the context of the operation at hand.

I think that's it for now. If you need any further details, please just let me know.

MEMBER McKINNON: Thank you.

I think the key points are very important, that they are fluid and they're based on historical processes in -- decided by the licensee and not, say, a fixed percentage, you know, which may result in excessive reporting or excessive under-reporting, so that's very clear, useful. Thank you very much.

MR. LEBLANC: President Velshi.

President Velshi, you may be on mute.

THE PRESIDENT: I blame Mr. Mooney for this.

Question to both Cameco and to CNSC Staff, and this is to do with the 18 exceedances of the daily action levels at the Port Hope Conversion Facility.

And the intervenor had asked questions, you know, were they quick exceedances or is it gradual over the day, but can you just share a bit more around these 18 and were there other facilities, other establishments that had similar issues because of the heavy rainfall?

And then I have a follow-up question to Staff on this.

MR. MOONEY: Thanks for your Question, President Velshi.

I think it's important to understand that the action level for uranium at the sanitary sewer was a new action level that was implemented as part of the 2017 relicensing of the Port Hope Conversion Facility. Previously, we had worked to a loading limit, so it's a bit of a learning curve there for us.

I think the -- in response to the specific concern on the sanitary sewer exceedances that we saw and the number in 2019, you're right that there was external event that we saw unusually high levels of Lake Ontario in 2019 which impacted that because what we were seeing was essentially infiltration of the municipal sewage infrastructure and sewage infrastructure on site do the

high lake levels.

That being said, we did take a -- we did investigate those events and we made a number of infrastructure changes, both in the immediate and longer term, and then there's some that are planned to take place as part of the Vision in Motion project.

So we did remove disused sections. That's part of building demolition. We replaced some lines. We relined some other lines.

We completed spot repairs and we rehabilitated infrastructure such as manholes.

So I'm happy to say that it's late in 2020 and we've only had one action level exceedance in this calendar year, so it's -- to us, it's indicative that the corrective actions that were taken were -- have been effective, but there is a longer game about some fairly significant infrastructure rework that's going to take place as part of Vision in Motion.

So as you heard from Mr. Smith earlier in the day, with COVID-19 and the pandemic, some of that activity that was planned, say, for 2021 may be taking place later, and so once the knock-on effect of some of the contractors and work plan not taking place in 2020, but overall, I would say the pieces have been moving on the chess board such that we've significantly reduced the

number of events in 2020.

And then in relation to the specific question on the events themselves, there are 24-hour composition samples that we collect on a daily basis, so the action level applies to the daily sample, so it's not real-time analysis. It's a composite sample that's analyzed.

So that's the way the action level's set up and, again, learning as we go there in relation to it, but overall, it's been a positive trend after we've tackled the issue of the infrastructure on site.

THE PRESIDENT: Thanks very much for that.

And Staff, a question for you. I know the intervenor had raised a number of issues, made a number of recommendations and some staff's response has been agree or we've already done it or we're going to do it, and in others like this one, for instance, where, you know, the recommendation was that staff should provide more details around events, it wasn't the only one -- staff's response was, "We will consider it", which is fair enough, but I'm just wondering, how would the Commission know how you eventually disposition that recommendation if, for now, it's only shown as being considered?

DR. DUCROS: Caroline Ducros, for the record.

I think this sort of plays into the fact that we do want to do continuous improvement and we are taking those recommendations seriously.

Between here and next year's report, we'll consider adding more detail or summarizing the events and encouraging the licensees to add more of that detail that's being requested onto their events website.

We're also making improvements to our facility websites to make some more information available. And I can get the communications division to speak more to that.

But we are also looking to the improvement that will come out of the discussion paper recommendations, and that might mean that the regulatory oversight reports evolve quite a bit or not. And so I think we were -- we were definitely not trying to be dismissive, but trying to see how we could consider the recommendations that were given for next year and then probably bigger improvements or changes coming afterwards.

THE PRESIDENT: Right. And sorry if I gave the impression that I thought you were being dismissive. Mine was just how do you track to make sure that those have been considered and the disposition is evident to the intervenor.

DR. DUCROS: Thank you. Caroline Ducros,

for the record.

We look at the -- when we developed the report this year, for instance, we looked at the transcript from last year, noted that there were certain things that we needed to do better like better hyperlinks to the annual compliance reports, for instance, which we put in the appendix, and we reviewed what we heard in the past to see how we can develop in the future.

Those are the types of metrics that I would look to.

THE PRESIDENT: Thank you.

CMD 20-M36.6

Written submission from

Swim Drink Fish Canada / Lake Ontario Waterkeeper

MR. LEBLANC: So I'm looking and trying to identify if there's any other raised hand. Not seeing any, we will then move to the next submission, which is from Swim Drink Fish Canada/Lake Ontario Waterkeeper, as outlined in CMD 20-M36.6.

Are there any questions from the Members on this submission?

Dr. Lacroix.

MEMBER LACROIX: Yes, thank you.

Most of my questions have been answered by Staff in document CMD M36B, but there is a question. Are the initial events reports available publicly?

DR. DUCROS: Caroline Ducros, for the record.

Initial event reports are presented to the Commission in a public Commission meeting setting.

MEMBER LACROIX: Thank you. That was a question raised by Swim Drink Fish Canada.

Thank you.

MR. LEBLANC: Dr. Berube.

MEMBER BERUBE: Well, first of all, I just want to mention to the CNSC Staff I'm fairly impressed with your dispositions on this particular topic, so thank you for putting the effort into being as thorough as you can there.

Just one issue that came up with this particular intervenor, recommendation 1. And this is something that I've heard several times over the last few years, is the way we report data in our reports.

In particular, I think this applies to the ROR because, you know, we're looking at facility comparisons, and in recommendation 1 here they're saying, you know, can you possibly standardize environmental data so that, you know, we're looking at sort of

apples-to-apples comparison.

And I know basically some of that's conversion, some of it's a lot of work, but could you talk to me about what you're doing to actually address this kind of concern?

DR. DUCROS: Caroline Ducros, for the record.

I'd like to pass it to the environmental protection group to speak to the data question.

MS SAUVÉ: Kiza Sauve, for the record.

So you are correct that environmental data is reported differently, and it depends on the way that the licence limits are established, concentration based versus loading based data, but we also do recognize the importance of providing consistent reporting throughout the ROR.

So we are looking at how we can do that.

I am going to also pass to Ms Haidy Tadros to talk about the NPRI type reporting that's happening, and that's trying to get some consistencies in there as well.

MS TADROS: Good morning, or good afternoon. I'm Haidy Tadros, for the record. I'm the Director General of the Directorate of Environmental Protection and Radiation Protection and Assessment.

So Ms Kaiza Sauve is correct. We are trying to be a little bit more plain language in how the

data is represented. As Commission Members may know, we are involved with the Environment and Climate Change Canada on a project for the National Pollutant Registry Inventory where we now have the opportunity to link all of the radionuclide data that we have from our major facilities onto the open government platform.

So the data's available, and as we've been following this initiative for several years now, this year we've made great strides in, one, getting the data onto that open government portal, but also working with interested stakeholders.

We have a working group where we, one, explain what we're doing with the data, where the data is coming from, and especially to speak to this intervention, provide a plain language understanding of what facilities are involved, what potential releases are at play, how the units for each of the datas are coming together and to give a better, consistent approach for understanding the data without interpreting the data because that, again, is important to stakeholders.

They, themselves, want to look at this data, understand why certain radionuclide are reported on for one facility and not the other facility, so it's that kind of context that we're trying to bring forward with this initiative and interlinking all of the information and

the data that we have.

MR. LEBLANC: Thank you.

So the next question, I think, is from Dr. McKinnon.

MEMBER McKINNON: Thank you very much.

I would also like to continue on the theme of data presentation, but perhaps focus a little bit more on the monitoring side.

The information that we're given in the CMDs is generally presented in annual averages, and I think, as Dr. Demeter mentioned, you know, the improvement of showing mean and maximum values is a big improvement. It's very helpful.

But my question is related to, you know, the data represents some underlying process and that has been measured by certain instruments. And certain processes are longer term and so an average value over a year may be valid, useful way of presenting that, and other processes may be very short term and you need a very different type of instrument to register those short-term spikes.

So I guess my question is, even though we are presented with the average values over long periods of time, how is the instrumentation program designed and how do you interpret the data to really make sense of these

spikes that may occur in the short term in certain processes? Because they are very important as well as averages.

If you could just discuss that aspect, please.

DR. DUCROS: Caroline Ducros, for the record.

If you could give me just one moment to confer with my colleagues, we'll get back to you very shortly.

Caroline Ducros, for the record.

I'll pass it to the environmental protection group to talk about the environmental management programs because these vary from facility to facility based on the complexity of the activities at the facility and the likelihood of interactions with the environment, and I think that will come partway to answering your question, I hope.

MS SAUVÉ: Kiza Sauve, for the record.

I'm going to start and then we're going to provide you with a groundwater monitoring example that might help explain things.

In the methodology for calculating some of the release limits in 288.1, spikes are taken into account throughout that CSA standard and in that document. So in

terms of spikes, that's where we hang our hat, I'll say, on that methodology that's been developed.

And so in terms of actual example, I'm going to turn to Dr. Shizhong Lei or Mr. Andrew McAllister to provide more context.

MR. McALLISTER: Andrew McAllister, Director of the Environmental Risk Assessment Division.

I believe Dr. Lei is ready to provide a response, but while he does that, I'll also just, Dr. McKinnon, in the line with what you're asking, I can use soil sampling as an example where we are seeing the goal -- oftentimes the goal for the soil sampling program is are there accumulations over time, and that's why, for example, year to year variations doesn't often tell us that. It's, rather, looking at the longer-term trends and seeing are we seeing any evidence of accumulation in the soil.

And that's an example of how some -- of a sampling program is designed to try to answer that question.

With respect to groundwater, I believe Dr. Lei can elaborate on that topic.

DR. LEI: Good morning. My name is Shizhong Lei. I'm a hydrogeologist.

Do you hear me?

MEMBER BERUBE: Yes, we do.

DR. LEI: Okay. I would like to take groundwater sampling as the example, and we call that sampling frequency, so it's very important for a licensee to design a sampling plan that would have sufficient or the proper frequency of sampling in order to capture any, for example, spikes. And that's why a licensee has to have a very good understanding of the hydrogeology and groundwater flows, so they can design the proper sampling frequencies.

And for example, for deeper groundwater, we don't anticipate huge variations over time, so the frequency could be lower. Some can sample just once a year and because we don't anticipate any spikes in deep groundwater, but for shallow groundwater, which is influenced by storm water infiltration and variation is huge, and they would have to sample it at a higher frequency.

And in some cases, at some facilities, we have identified some like spills or uncontrolled release or unusual events, we would ask them to sample maybe even on a weekly basis, so once the -- in order to -- or even daily depending on the variation and the frequency of the spikes.

I hope I answered the question.

MEMBER McKINNON: Thank you very much, yes, because it's not always apparent from the data and the graphs that were shown in the RORs that, you know, there is

that variation in sampling and the methodologies of the different parameters, so it's very useful to hear that explanation.

Thank you.

DR. LEI: Maybe I can add quickly maybe more on that.

The Staff review, we would look at all the data reported, but for the ROR report it's just a summary and it's just very small parts of what Staff have been doing.

MR. LEBLANC: President Velshi.

THE PRESIDENT: Thank you.

So I'd like to start by thanking the intervenor for acknowledging how, over the years, the licensees and Staff have tried to address the need for more data, desegregated data, more disclosure, and clearly it's a journey that everyone is on and there's always room for improvement, but it was good to see the acknowledgement of the special efforts that have been made by all.

And then the one specific area I did want to ask was around groundwater and contaminant levels around the Port Hope Conversion Facility.

And I think CELA had also raised concerns around increasing concentrations of nitrite, radium-226 and ammonia. And in this particular intervention, again, the

intervenor has raised concerns about that. But what I was particularly disturbed to read was not for the PHCF but for the CMF, CNSC Staff merely assert they have seen the groundwater data but refuse to provide any.

So two parts. Question 1 to Cameco around what's happening at PHCF for groundwater contaminants, and then Staff, tell me a bit about why groundwater data for CMF -- I'm sorry, it's CFM, right -- is not being provided.

MR. LEBLANC: Cameco?

MR. MOONEY: Thanks for that, President Velshi.

I'm going to ask Rebecca Peters to talk a little bit about the groundwater pump and treat system that we have and also some of the specific issues that have been raised.

I think it's also important -- we had this lead-in that we talked about, the Vision in Motion project, and there's a substantial reworking of the site that's part of that that will impact the future state of the facility and what the groundwater treatment picture will look like post the completion of those activities.

So maybe I'll just hand it over to Rebecca because she's far more familiar with the groundwater at the conversion facility.

MS PETERS: Thank you. Rebecca Peters,

for the record.

So the Port Hope Conversion Facility has had a groundwater treatment system, a pump and treat system, as we refer to it, in place at the facility since 2008 shortly after subsurface contamination was identified.

Over the last little over a decade, the number of groundwater pump and treat wells have expanded to address subsurface contamination in various parts of the facility.

The intent of these wells is to draw the source of the contamination towards the pump and treat wells. It is adjusting how the groundwater is flowing beneath the site. So we do expect to see variation from quarter to quarter, year to year as the different pockets of contamination are moving towards the groundwater wells. So we do expect to see the fluctuation that we are seeing. We do expect to see over time, as the source material is removed, some longer-term reductions in the amount of specific contaminants that are being removed on an annual basis.

There will also be a significant change with the Vision in Motion project. There is a substantial excavation in the north end of the facility where the majority of the contamination is and we expect to see a lot of change at that time. So we are monitoring it on an

ongoing basis, regularly reporting on it to CNSC staff. We are continually removing contaminants from the groundwater and reducing the loadings to the Harbour and we expect to see this change as the years go on.

I think it is also important to note that we do have performance objectives for the facility related to groundwater contamination removal and we are adhering to those objectives. So that is reported in a comprehensive report to staff on an annual basis.

THE PRESIDENT: Thank you.

So have you done modelling that would indicate what it is you are anticipating and then compare that to what you actually measure?

MS PETERS: Rebecca Peters, for the record.

So yes, there is a comprehensive groundwater model for the facility and part of that annual report that we do to CNSC staff, I believe it is every two years, in that report we do update the model and reestablish the expectations and make comparisons against that.

THE PRESIDENT: And your general comment on how accurate the modelling has been so far?

MS PETERS: Rebecca Peters, for the record.

I believe the more information you get, the more accurate the model gets. So with about 12 years of data beneath us, we are getting more and more accurate with our predictions and our results.

THE PRESIDENT: Thank you.

MR. LEBLANC: CNSC staff...?

DR. DUCROS: Caroline Ducros, for the record.

I would like to pass this to the Environmental Risk and Assessment Division, and the Project Officer for the Port Hope Conversion Facility can add after that.

MR. McALLISTER: Andrew McAllister, Director of the Environmental Risk Assessment Division.

To speak to your question, President Velshi, on Cameco fuel manufacturing facility in the absence of groundwater results, I am going to chalk that up just to an artifact of the ROR. They do report on their groundwater monitoring to us. We review that in brief. The groundwater concentrations that we are seeing in that site are variable. We do see higher levels towards the northeast corner of the facility, which is consistent with some historic soil impacts. But we are also complementing the groundwater monitoring with the surface water sampling results that have been reported in the Regulatory Oversight

Report, which did highlight some short-term exceedances, but certainly the longer-term protection under the CCME guidelines is being met in those cases. So I would view that as sort of moving forward for next year's Regulatory Oversight Report.

There could be certainly more information added on the groundwater section and I will pass it over to the Licensee Division to provide more information on those aspects.

MR. THELEN: John Thelen, for the record. I just wanted to add a point to supplement what Ms Peters from Cameco had mentioned.

With respect to the Cameco Port Hope Conversion Facility groundwater capture system, not only is this a requirement of the licence that was issued by the Commission in 2017, reporting of its performance is also required, including Cameco, as needed, to change or augment the pump and treat capture efficiency.

As well, just to make it really clear, Cameco continues to collect and evaporate captured groundwater, so there are no liquid effluent discharges from the facility tied to this system.

THE PRESIDENT: Thank you.

And I don't know whether it is you, Mr. Thelen, or whether it is Mr. McAllister, but what is your

comment to the statement in the intervenor's submission about refusal to provide data on the groundwater around the CFM? It is on page 9 of CMD 20-M36.6.

Let me rephrase it. If an intervenor or any member of the public asks for this data, what reason would there be to not give that data?

DR. DUCROS: Caroline Ducros, for the record. I will start and I will pass it to the people who analyze the data.

There is no -- if there is no proprietary information in the data, there is no reason not to disclose that data. So if we had a request for particular data, if we weren't the owners we would go to the licensee and say that we have had this request and get permission to release the data.

I don't know if any of the specialists in Environmental Risk Assessment Division would like to add?

MR. McALLISTER: Nothing further from us. I believe Dr. Ducros has captured that question.

MR. LEBLANC: And I note that Mr. Jammal would like to weigh in.

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

I would like to clarify, Madam President, your question. Anything we use for regulatory decision and

evaluation will be publicly available, protecting if there is any proprietary information, just to reiterate what Dr. Ducros mentioned. So upon request, all the information is available and specifically if we use it for a decision. In this case the assessment was done for the purpose of the licence and the performance of the licensee, so this information would be available upon request.

THE PRESIDENT: Let me ask staff to follow up on this. I want to read this particular sentence. It says:

> "For the CMF [*sic*]..."

But they meant the CFM.

> "...CNSC staff merely assert they have seen the groundwater data, refuse to provide any, and instead assure that the facility is not contributing to groundwater concentrations of uranium."

So it is used for assurance purposes. Refuse to provide data, here it was a request for the data that was -- can staff please follow up and let us know what's happening here, please?

MR. JAMMAL: We will take that direction, Madam President -- it's Ramzi Jammal, for the record -- if there were any requests or a request that fell through the

cracks or no request came in, but we will be responding to you via memo.

THE PRESIDENT: Thank you.

MR. JAMMAL: We will take this on.

THE PRESIDENT: Again, it is in a spirit of transparency and we have come a long way, and I know the Commission would want to see comments like these from our communities.

MR. LEBLANC: And we have Ms Peters that would like to address this as well.

MS PETERS: Rebecca Peters, for the record.

I just want to say, from Cameco's perspective, we have met with this intervenor previously and provided groundwater data for the Port Hope Conversion Facility. We would be willing to do so again with respect to CFM, but there has not been any requests that have come to us either directly from the intervenor or from staff.

THE PRESIDENT: Thank you.

CMD 20-M36.7

Written submission from the Algonquins of Ontario

MR. LEBLANC: Thank you.

I don't see any additional raised hands

with respect to this intervention, so we will move to the next submission, which is from the Algonquins of Ontario, as outlined in CMD 20-M36.7.

Any questions from Members on this submission?

Dr. Lacroix...?

MEMBER LACROIX: Yes, indeed I do have a question. Could staff tell us a few words about the Kichi-Sìbì Guardians program and why should this program be included or integrated into the IEMP program?

--- Pause

MR. LEBLANC: CNSC staff...?

DR. DUCROS: Caroline Ducros, for the record.

I would like to pass this to the Environmental Protection Division, please.

MS SAUVÉ: We are actually going to start with Mr. Adam Levine, if that is okay with you, Dr. Ducros.

MR. LEVINE: Hi there. Adam Levine, for the record.

So we have been talking with the Algonquins of Ontario for the last year or so about their Guardians program. It is something we are very interested in learning more about.

If we go back a few years ago now, we

actually did some collaborative environmental sampling with them around the nuclear power demonstration site with one of their knowledge holders and walked the land with them and selected components of interest to them and shared the results back and they commented on that as well. So we have already established a good working relationship with the AOO on the IEMP.

But certainly, moving forward, the next time we are going back into the Chalk River area within their territory to do our sampling, it is something we committed to, to talk more about their Guardians program and meeting with them, the Guardians and those that they are training to provide more information about our IEMP and to see how they can be involved and potentially supported through our Participant Funding Program as well. So we are at the early stages still and we are hoping to get back out there in the next few years.

Thank you.

MS SAUVÉ: Thank you, Adam.

Kiza Sauvé, for the record.

I must admit I was on the previous intervention and was a bit lost at what you were asking.

For this one, what I would want to add -- and I want to go back a little bit to the indigenous knowledge question that we were talking about when we were

talking with the Algonquins of Pikwakanagan.

Something that we did with the Algonquins of Ontario when we did sample around Nuclear Power Demonstration was some of their community members came with our sampling team and so when the Algonquins of Pikwakanagan were talking about the back and forth learning, our sampling team learned all about the different medicinal plants and how those plants are used in their community. So when we are working with those indigenous communities, we have a much better understanding now of why certain things are -- they are interested in certain different plants and parts of the environment. So we are looking forward to continuing to work with them as we go forward with our IEMP.

MEMBER LACROIX: Interesting. Thank you.

MR. LEBLANC: Are there any further questions from the Members on this intervention? I am looking for raised hands.

CMD 20-M36.8

Written submission from the

Canadian Nuclear Workers' Council

MR. LEBLANC: I don't see any, so we will proceed to the next submission, which is from the Canadian

Nuclear Workers' Council, as outlined in CMD 20-M36.8.

Questions from the Members on this submission?

--- Pause

CMD 20-M36.9

Written submission from the

Municipality of Port Hope

MR. LEBLANC: As there are none, I will proceed to the next submission, which is from the Municipality of Port Hope, as outlined in CMD 20-M36.9.

Any questions from the Members on this submission?

This, Madame la Présidente, concludes the written submissions.

THE PRESIDENT: Thank you very much for that, Marc.

It may be a good time now to break for lunch and then we will resume for questions from Commission Members both on the Regulatory Oversight Report as well as the Vision in Motion Project.

So we will reconvene at 1:30 p.m.

We will see you then. Thanks.

--- Upon recessing at 12:26 a.m. /
Suspension à 12 h 26
--- Upon resuming at 1:30 p.m. /
Reprise à 13 h 30

THE PRESIDENT: Good afternoon, everyone, and welcome back.

So we are finished with our interventions and before we open the floor to Commission Members for any other questions that they may have, Dr. Ducros, I believe you have an update you would like to share with us, please?

DR. DUCROS: Thank you.

Caroline Ducros, for the record.

As promised by Mr. Jammal, I would just like to get back to the Commission about the data availability and transparency question, specifically with respect to the Swim Drink Fish CMD 20-M36.6, page 9.

So in there the intervenor stated:

> "For the CMF [*sic*], CNSC staff merely assert they have seen the groundwater data, refuse to provide any, and instead assure that the facility is not contributing to groundwater concentrations of uranium."

So it may be that the intervenor wanted

the data in the Regulatory Oversight Report and this is something that we have agreed to consider adding or to summarizing in future RORs, but I would like to assure the Commission that the CNSC staff have looked into it, whether a request came in that we might have missed, and just to confirm that there was no request made to the CNSC through the many channels for this groundwater data. There were a number of avenues that could have been used, such as like the information line, e-mail or through the Regulatory Program Division or the Secretariat or ATIP. So I just wanted to reiterate, as I noted earlier, that we would not refuse to disclose this type of information and we are really working to improve transparency.

THE PRESIDENT: Thank you. That is very reassuring.

--- Technical difficulties / Problèmes techniques

THE PRESIDENT: And of course we have heard from Cameco and they are willing to make that information available. So thank you for following up on that and clarifying the record.

So we will now open the floor to Commission Members --

--- Technical difficulties / Problèmes techniques

THE PRESIDENT: -- both questions on the Vision in Motion Project.

And we will start with Dr. Demeter, please.

MEMBER DEMETER: Thank you very much.

I wanted to ask a question regarding SRBT, their tritium levels in MW06-10, and I am referring to the table presented by staff on M36.B, pages 33 and 34.

So first, thank you very much for the details on the annual measurements and the graph at the bottom. So the graph at the bottom demonstrates sort of a stable state from 2008 to present, which is almost one half-life, so there is obviously an equilibrium where the deposition is offsetting any decay.

First of all, two questions.

One, is there a way of reducing this deposition so that it goes down?

Secondly, does this deposition in groundwater have any interconnectivity with any geohydrological underground water that could impact any of the underground water supply?

DR. DUCROS: Caroline Ducros, for the record.

I would like to pass the question to the Environmental Risk Assessment Division.

MR. McALLISTER: Andrew McAllister, Director in the Environmental Risk Assessment Division.

I will pass that on to Dr. Shizhong Lei. Dr. Lei has an extensive regulatory history on the site and has been involved with overlooking the groundwater monitoring results since early two thousand.

So I will pass that to Dr. Lei at this time.

DR. LEI: For the record, my name is Shizhong Lei.

Since 2006 when a high tritium concentration was discovered near the facility in the groundwater, the facility was shut down and SRBT conducted a very comprehensive groundwater hydrogeological study on the site. And when they reapplied for licensing, CNSC staff reviewed their results. They had taken all the measures to remove the potential sources identified in the course of the contamination, but we found that the tritium in the groundwater wells, especially the two wells near the stack, were still going up.

So CNSC staff conducted our own study of the site and we modelled/simulated how the tritium in the groundwater wells around the site might evolve. We also assessed how the tritium release at the other site in the groundwater would impact the surface water.

The nearest river, Muskrat River, was about 400 metres away and we concluded that even with the

highest tritium concentration discovered on that site, which was around 2005 or 2006, there still wouldn't be an impact because during the migration of tritium it goes through many different processes, so the tritium concentration would be reduced to almost below the detection level with regard to the potential impact to the surface water.

CNSC staff's own modelling of the site also indicated that the groundwater at that time, around 2008 -- we concluded that although it was still going up, it would eventually come down and reach the peak in one or two years and eventually it will come to -- as Dr. Demeter was mentioning, reach a kind of equilibrium.

CNSC staff also was carefully watching the progress. It turned out all the monitoring results at the site confirmed our projection. So before the tritium concentration reached the peak, even though it was going up, CNSC staff at that time recommended to the Commission that SRBT had done all necessary mitigation measures and eventually it would come down to the count level. According to CNSC staff projection, it would reach around the 30,000 Bq/L level in long-term waste, given the conditions and the production, which seems to be -- CNSC staff's prediction was pretty satisfactory. CNSC staff reported our own assessment in the U.S. in a conference and

it was well received as well.

So in conclusion, we have a relatively very good understanding of the tritium situation, and the environment and humans are protected.

MEMBER DEMETER: That really helps explain it. Thank you very much.

THE PRESIDENT: Dr. Berube..?

MEMBER BERUBE: Yes. This question is for CNSC and maybe Cameco could talk a little bit about it as well.

One of the issues I noticed in the ROR was -- and this was mentioned earlier, too -- was the storm sewer backup issue, and the reason being high lake levels had some sewage issues associated with that, but fundamentally -- big rainstorms as well -- that was just a high level for the lake in general.

But looking forward and factoring things like climate change, especially climate change, knowing that we are probably going to have bigger storms going forward, more rainfall, how are we accommodating for that with planning long term into the future to mitigate potential issues like this that we have seen at Cameco, simply because we have a number of facilities on lakes?

CNSC, would you start with that, please?

DR. DUCROS: Caroline Ducros, for the

record.

I will pass it first to the Project Officer for Port Hope Conversion Facility, because I believe that is the facility in question, but for the broader issue of climate change and planning for that, we will pass it to the Environmental Risk Assessment Division afterwards.

MR. THELEN: John Thelen, for the record.

Cameco may be able to provide some extra context you are looking for as well, but the Port Hope Conversion Facility is a very unique circumstance. As you know, the facility is on the edge of Lake Ontario. It is on a piece of land that has a lot of interaction with groundwater and any changes to the Lake Ontario water table have tremendous impacts with groundwater at that site.

Understand as well that the facility is a facility that has roots back to the 1930s, so the sanitary sewer network is an aged network. The network is currently being improved under Vision in Motion. Cameco spoke to it and we spoke to it earlier in our slides as well. The upgrading is intended to overcome not only any necessary changes to eliminate infiltration of groundwater but also improve the network and looking forward as well with respect to climate change.

DR. DUCROS: I wonder if our colleagues in

the Environmental Risk Assessment would like to add on about the planning.

MR. McALLISTER: Andrew McAllister, Director of the Environmental Risk Assessment Division.

With respect to sort of a planning perspective, it really starts, if you look at sort of a regulatory process for those new projects that would require -- formerly an environmental assessment -- currently an impact assessment, you need to look at the effects of the environment on the project and climate change is really front and foremost in that kind of analysis.

As we move into our licensing phase, then we have our checks and balances around climate change that get looked at on a periodic basis.

First off, they do get looked at from an environmental risk assessment perspective. Those get updated on a five-year basis and are informed by advances in science, latest meteorological information for example to look at the predictions, potential impacts on the environment.

Likewise, on a safety analysis perspective, they also do get examined again on that regular five-year basis where external hazards, for example flooding, high winds, other external events, are also

looked at on that sort of five-year basis to reflect the latest science to see what effects, if any, they may have on the facility.

With respect to the Port Hope Conversion Facility specifically, there was -- there has been a lot of work done in conjunction with the Ganaraska Conservation Authority that looked at flooding-related aspects. CNSC staff had reviewed that and provided comments a few years ago about needing -- in light of the studies and the need for a contingency plan in the event that upset conditions were realized. And that in fact did occur a few years ago, the contingency plan was effectively implemented. So that is an example again of how we take that information and translate it into a regulatory direction to the licensee that they have implemented and it has been successful.

And if other of my colleagues have additional information to add, I will pass it on to them at this point.

MR. MOONEY: It's Liam --

THE PRESIDENT: Dr. Berube...?

MR. MOONEY: Oh, sorry. It's just -- thank you.

I just -- yes. I think the only thing I was going to add was in addition to those safety analyses and the ERAs are updated in accordance with the CSA

standards, the specific response that we had talked about earlier today on a number of infrastructure changes, and the CNSC Project Officer touched on that, but those are going to reduce the risks associated with high water levels, particularly focused on the sanitary sewer system. That is also part of the municipal infrastructure.

But the other piece that I would say is that as part of VIM there are activities such as installing flood protection berms along the harbour side of the property and backflow prevention valves in all the new stormwater sewer outlets. So existing stormwater sewer outlets are being replaced with four. The existing 10 are being replaced with four and those are going to have that backflow prevention.

And finally, our Emergency Response Team has been equipped with items to respond to those sorts of events more in-depth if they are to occur again.

So I think overall there is the VIM piece that I touched on, the broader infrastructure, but a number of interim actions have been taken and in the longer view, as Mr. McAllister mapped out for you, is taken into account both through the safety analysis and the ERA updates that are performed on a regular basis.

THE PRESIDENT: Thank you.

Do you have a follow-up question, Dr.

Berube?

MEMBER BERUBE: Yes. I just wanted to get a little more definition on where they are getting the data from for the climate models, looking at specifically where are those models coming from and how are they being actually analyzed for use with looking at potential issues with facilities.

DR. DUCROS: Caroline Ducros, for the record.

I will pass it to the Environmental Risk Assessment Division. I am not sure if Environment and Climate Change Canada would also like to comment. They are here, too, today.

MR. McALLISTER: Andrew McAllister.

DR. LEI: For the record, Shizhong...

MR. McALLISTER: Oh, go ahead, Shizhong. I'm sorry.

DR. LEI: Maybe you start first.

MR. McALLISTER: You go ahead, Shizhong.

DR. LEI: Okay. My name is Shizhong Lei, for the record.

The climate change climate circulation model or the global circulation model is defined or used for regional scale and for any particular site they have to use advanced scaling technique to get specific information

from the modelling. Most licensees don't need to do it and it is only -- like they require specialists in this field to do this, but licensees most of the time don't need to.

I will give you an example at this particular location how climate change is considered at Port Hope Conversion Facility. There are two aspects here.

One is about the Lake Ontario water level. The Lake Ontario water level is actually regulated and there have been multiple studies nationally and internationally as to how the water level in Lake Ontario might change as a result of climate change. So the overall conclusion is that, yes, the level would increase by maybe as much as 1 metre in the next hundred years or so.

Lake Ontario is one of the two Great Lakes where the water level is regulated through a Commission between U.S. and Canada in order to meet different water use purposes. So the variation is not -- like it's kind of not fully but partially under control. So in that sense the impact of climate change on the water level is reduced to some extent.

Specific to this particular site, Cameco indicated that there might be -- the high water level in the lake is partially responsible for the exceedance of action levels in the sewer. CNSC staff checked the water level records at that particular site in the past five

years. We found that the water level in 2017, especially in the spring and the summer period, is almost the same as the water level in 2019. So our conclusion is that the water level in the lake is less, maybe it plays a minor role in the exceedance.

But Cameco has already done all kinds of mitigation measures to mitigate the sewer issue. At the Centre Pier during the flood risk assessment a few years ago CNSC staff noticed that the soil pile in the Centre Pier actually plays a huge role to block the water. If extreme floods even happen, the water would be boxed, so it wouldn't get into the Cameco site. And now the Centre Pier soil is gone.

CNL actually conducted another updated flood risk assessment at the site and they have put up some temporary concrete blocks for use during the Port Hope Area Initiative project construction time. So in that assessment they have done the flood hazard assessment based on the average water level in Lake Ontario at that site, which is 74.7 metre above sea level.

In addition to that, they also added a scenario whereby they just hypothetically assumed if the water level is 1.2 metres higher than the average water level, what would happen. So that is a way, an indirect way to account for the climate change. So in a sense they

don't need to get the global climate model data and they can still take climate change into practice.

I hope I answered your question.

THE PRESIDENT: Okay. So we have Ms Tadros and then maybe we can ask Ms Ali from Environment and Climate Change Canada to weigh in on this as well.

So Ms Tadros...?

MS TADROS: Thank you, President Velshi.

The only point that I would want to make reference to is Dr. Shizhong gave an excellent portrayal of the analysis and the work that we do with climate change data that is available to us on how we update our regulatory framework. So as we look to our regulatory framework and look at the requirements that are established for the different programs that are involved in environmental monitoring and environmental control, we would look to doing the analysis that Dr. Shizhong just gave with regards to climate change and add, if needed, additional requirements and guidance when it comes to issues of climate change like flooding for example. So I just wanted to add that in there as an example of how our regulatory framework is continuously improved with the information and the data that we are aware of.

Thank you.

THE PRESIDENT: Thank you.

Ms Ali, are you with us today?

MS ALI: Yes. So can you hear me?

THE PRESIDENT: Yes, we can. Thank you.

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

Unfortunately, this is a topic where a lot of the work is still in progress. So our people are working -- I mean our strategic assessment on climate change was published in July 2020, but it is a really high-level document and I know there are several experts in our department working on different types of guides, like climate resilience guides. Unfortunately, not a lot of those are available yet.

But what I do want to say, though, is that when CNSC is reviewing documents for different nuclear facilities, under our MOU we work together and we bring in our experts so that any information that is available at that time, you know, will factor into the review. There is some work being done on looking at Canadian Great Lakes coastal wetlands and resilience for that, but very limited information we have at this point in terms of guides. But there are works in progress and we will bring in Environment Canada's knowledge as it develops into CNSC reviews of, you know, the modelling and any kind of assessment, the things that need to be done for climate

resilience.

I just wanted to also pass to my colleague Duck Kim so that he can sort of -- like he had told me that there were a few things that Cameco has done, even without definite guides. Like they have done a few things to sort of prepare for possible increases in lake levels and things like that.

So Duck, would you like to just give a couple of examples of those really briefly?

MR. KIM: Sure. Duck Kim, for the record, Environment Canada.

So, as Dr. Shizhong Lei has expressed, Cameco at Port Hope Conversion Facility have anticipated the water level issues. Environment Canada does regulate Lake Ontario, as Dr. Lei has indicated. It is one of two lakes. However, the level of control is limited and so resilience and adaptive measures is what is really key here in terms of predicting. What the lake levels will look like is also uncertain.

Yes, there are currently the IPCC models and the global models, and the regional models are showing some increase into the future in lake levels, but it is still quite uncertain. Therefore, my understanding -- and we certainly encourage the adaptation to lake water level uncertainty. There is additional berming that I understand

around the Port Hope Harbour, the Centre Pier and the approached channel, as well as the work in preparation for the Port Hope project will be more robust to water level increases.

This past spring there was some concern about water levels exceeding last year's water levels, but as an example that did not come to pass. The rains and the meltwater that was -- could have been expected didn't happen and the lake water levels did not approach what it was last year. But once again, it is preparation and we are generally happy, if that is a good word, with the preparations and adaptive measures that Cameco has taken.

THE PRESIDENT: Thank you very much for that.

And while we have both you and Ms Ali here, from your perspective, is there anything else you would like to share with the Commission as far as how these uranium and nuclear substance processing facilities are managing the environment and protecting the environment?

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

Since Duck is working more closely with these projects, I will just pass it to him. **MR. KIM:** Okay. Duck Kim, for the record, Environment Canada once again.

Overall, we are -- so at the Port Hope Facility one of the ongoing issues that we have followed and contributed to, engaged with is the groundwater issue. We are generally satisfied with the level of effort. They have installed many boreholes to detect and to characterize the groundwater plumes, as well as several pump and treat wells to collect and treat the contaminated groundwater that is flowing into Lake Ontario, into the harbour.

Certainly, our main mandate is for the contaminated groundwater entering the lake and from that perspective we know there are limits on how much Cameco can do, but overall the level of effort that they have made we think is as much as they can do and we expect that in the future with cleanup with VIM that the situation would be even more improved. And as a department we are expecting to delist the Port Hope Harbour as a result of the cleanup work that is ongoing at the Port Hope area.

THE PRESIDENT: Thank you. Thanks very much for that.

Let's move to Dr. Lacroix.

MEMBER LACROIX: Thank you, Madame la Présidente.

First of all, I would like to thank staff for providing us with a document concerning the response to the intervenors. As usual, it is easy to read and it

answered many of my questions.

Speaking of this document, which is document M36.B, when I go to page 22 -- and it is related to the uranium concentration in groundwater at BRR facilities -- I was surprised to find out that you found an elevated uranium concentration, but it is in relation with well number 22. There is something that I am missing here. You say that the monitoring well is located upstream of the refinery. Does that mean that the refinery has nothing to do with the high uranium concentration or is it a natural background? So could you clarify this, please, for me?

DR. DUCROS: Caroline Ducros, for the record.

I would like to pass this one to the Environmental Risk Assessment Division.

DR. LEI: For the record, my name is Shizhong Lei.

This particular monitoring well 22 is upgrading, which means that it has a concentration, uranium concentration in the well that is not related to the production.

And Cameco has conducted comprehensive studies on that particular well, and CNSC staff has been also paying close attention to it. And if it is -- when CNSC staff noticed a trend, it was not because there was

any impact to the environment. But it just alerted us we wanted to make sure that there's no uncontrolled release or something. And they found out that it is actually related to some historical practice many years ago, where they stored some contaminated containers or something. And that practice has been stopped.

And we also noticed that the uranium concentration in that well had a spike only around 2018, and since then it has come down. So it's not a concern for the environment and we concluded that they have well understood the situation. And it still continues to be monitored. If the situation changes, they will take measures accordingly. And over the years there's no -- the tritium is not spreading, and it's very localized just in that particular location only.

MEMBER LACROIX: Can you explain the spike in 2018?

DR. LEI: That we don't know exactly, but it might have something to do with -- because uranium in the groundwater and in the soil is a very complicated process. Usually, it is attached to the soil particle. And when you get rainwater, for example, infiltrating into the soil, it might flush out a little bit. So the concentration variation in the groundwater is not necessarily a reflection of added, like, contaminants or

uranium into the groundwater system or into the soil. But it's just a reflection of the dissolvement of uranium from the soil particle into the groundwater. And that's CNSC staff's interpretation of this spike.

MEMBER LACROIX: And when you say you're monitoring this well, is it on a daily basis, hourly basis? What's the frequency of measurements?

DR. LEI: I believe it is monitored on a quarterly basis.

MEMBER LACROIX: Ah, okay.

DR. DUCROS: Caroline Ducros, for the record.

I could pass it to the project officer, Mr. Mike Jones, to talk about how we do the compliance monitoring and what information we get, or Cameco can also discuss their environmental monitoring program.

MR. JONES: For the record, my name is Mike Jones, project officer. I deal with the Blind River Refinery.

First of all, just to add on what Dr. Lei had mentioned, based on the -- I guess the investigation done by Cameco, the elevated levels are attributed to historical activities, and it's believed currently that the source is from drum cleaning activities that occurred approximately seven to 10 years ago. So that's kind of the

likely source of the activities. We haven't, you know, had any reason to think it's the result of any current ongoing activities, but it's from those activities in the past.

And related to compliance activities, Cameco is required, like other licensees, to have an environmental monitoring program which includes groundwater monitoring, and they do monitor groundwater wells, including the one that was mentioned on a quarterly basis, like Shizhong Lei mentioned. And those are reported to the CNSC in the annual compliance monitoring report.

And in addition, we do do inspections of the Blind River Refinery, and we do do focused environmental protection inspections, at which time we would look at, you know, the data that was collected related to groundwater monitoring, potentially looking at the locations of groundwater wells, and then asking questions specifically of personnel at the refinery.

Thank you.

MEMBER LACROIX: Thank you for the answer. Thank you.

THE PRESIDENT: Does Cameco have anything they'd like to add to this?

MR. MOONEY: Sure. I think it was fairly well covered, but we were looking at a localized impact there, and again, as has been stated, it was attributable

to slightly contaminated surface run-off in the vicinity of the monitoring well. We had temporarily stored empty UOC drums in the area prior to the grit blasting of those. We did an investigation, as Mr. Jones referenced, and repaired cracks and openings in the asphalt in the area. And the 2019 average and maximum uranium showed a decrease relative to 2018.

I think it's also important too, as far as the numbers that we were looking at in 2019, the 2019 results were well below Health Canada drinking water guideline and the Ministry of Environment, Conservation, and Parks in Ontario table 2 and table 8 standards of 20 µg/L.

THE PRESIDENT: Thank you.

Dr. McKinnon?

MEMBER McKINNON: Yes, thank you.

I'd like to return back to the Port Hope facility, and in particular the harbour water quality that was monitored between 2015 and 2019. And this is reported in Table I-8. And it was noted that the maximum uranium concentration was elevated in 2019 compared to previous years. And that was linked to some remedial work and associated sediment disturbance. And in the table, it shows that the levels of uranium were higher than the guidelines in 2018 and 2019.

So I have two questions. The first is to CNSC staff. Does this -- can this be interpreted that the uranium has accumulated in the lake sediments and there are various mechanisms for that to occur?

And secondly would be a question to Cameco, if there is any remedial measures planned such as dredging, you know, similar to the soil remediation which is done on land.

Thank you.

DR. DUCROS: Caroline Ducros, for the record.

For the CNSC response, I'd like to pass it to the Environmental Protection Divisions.

MR. McALLISTER: Andrew McAllister, director of the Environmental Risk Assessment Division.

I guess to your question, Dr. McKinnon, you were wondering if the increase was attributed to a potential accumulation in the sediments.

MEMBER McKINNON: Correct, yeah.

MR. McALLISTER: Correct. Okay. I might have to ask either one of my specialists or perhaps somebody in Environmental Compliance to support the answer. But certainly, there has been a lot of activity within that area that might have attributed to that.

As far as sediments and uranium, I might

have to ask other Environmental Protection staff to verify whether or not, for example, there's any sediment monitoring that has happened or does happen that might also give an indication of uranium accumulation. So perhaps if somebody else can have that. And if not, we can always get back to you with a more precise answer.

MR. MOONEY: Mr. McAllister, maybe I could help out there, and then if there's anything I miss, staff could weigh in.

But I think that on the question on the harbour water quality, it was attributed to sediment disturbance after removal of large debris from the harbour as part of CNL's harbour remediation work.

In relation to Dr. McKinnon's question, CNL is going to be dredging the harbour as part of its remediation efforts in the harbour. And then in November 2018, we also had an increase in uranium mobilization from the west turning basin wall that failed and slumped into the harbour.

Again, with respect to the Port Hope Conversion Facility, we don't have any process effluent that's discharged. We have a once-through cooling water system that we rely on the water in the vicinity the operation for.

But overall, to your question, there is

remediation work planned that CNL is going to be carrying out or is underway in relation to the harbour, and that would include the contaminated sediment that's in the harbour presently.

MEMBER McKINNON: Okay, thank you very much. Yeah, that's very informative.

THE PRESIDENT: Thank you.

So maybe I'll shift gears. A question for CNSC staff. So this year, because of the challenging circumstances we found ourselves in, you've decided to go with a more simpler assessment rating system, the binary rating of Satisfactory or Below Expectations.

And given the kinds of confusion that Fully Satisfactory has caused in the past, and I think we even hear it now with some of the interventions where intervenors feel that Fully Satisfactory is the only rating that the regulator should find acceptable, is staff's thinking on the rating system changing? Is that going to be part of the review process that's getting initiated next year?

DR. DUCROS: Caroline Ducros, for the record.

Yes, just to put a little bit of context, this year the pandemic didn't affect our compliance verification or our regulatory oversight for the 2019 year.

However, it did affect how we -- it did affect us in Canada when it came time to write the report. And a lot of effort is put into coming to agreement amongst the experts and the inspectors on a rating of Fully Satisfactory for any particular safety and control area, remembering that the definition for Fully Satisfactory is that it exceeds requirements and that we're looking for sort of trending upwards.

We felt that it was perfectly good to have a Satisfactory or Below Expectations rating. So the decision to eliminate that step allowed us to focus more of our efforts on the performance of the facilities to make sure that they weren't being impacted by COVID and that the operational safety was where we wanted to put our efforts.

In terms of where we go if we want to carry on doing this binary approach where we're talking about Satisfactory or Below Expectations, I think we will be looking to what comes out of the discussion paper and feedback. But just to emphasize that a Satisfactory rating says that the facilities are meeting CNSC's expectations, and that when we assign a rating like that, we are looking at the facilities meeting the regulatory requirements, that their programs are working, that they have reacted to any non-compliances or non-conformances in a way that we find satisfactory.

So to answer your question, I'm not sure what the future holds. I think we'll have to wait and see what the discussion paper comes back with and also what direction I guess the Commission would like to see in this respect.

THE PRESIDENT: Thank you.

I think what would be helpful, I mean the reason why you decided not to do the rating -- assess for Fully Satisfactory is you would rather spend your efforts on operational safety. Well, that's a very compelling argument at any time, not just during these times. Right? So it would be good to get a sense of what is the level of effort.

And maybe I can ask some of the licensees to weigh in. Does it matter to you whether it's Satisfactory or Fully Satisfactory?

MR. MOONEY: Liam --

THE PRESIDENT: Let's ask the question that way, but does, you know --

MR. MOONEY: Yeah, I know where you're going with that for sure. I mean, it does matter to us that, you know, we have at least a Satisfactory rating.

It's always a bit of a challenge for us when we see the distinction between Fully Satisfactory and Satisfactory. And so in that respect, we think that this

approach, this binary approach, as it's been styled, may be better as far as it addresses some of the issues that have been in the past about, well, what does it take to get to Fully Satisfactory.

But you know, think it is but one input for us. We have our own targets and objectives that we work to, and we take, you know, CNSC compliance -- regulatory compliance in general very seriously. So you know, anything, whether it's unsatisfactory or Below Expectations would require a response from us.

So I think on the lower end of the scale, the response would be the same. On the higher end of the scale, it's always been a bit qualitative on what takes it to that next level, that Fully Satisfactory, which has been the source of some frustration.

THE PRESIDENT: Right. Thank you.

Any of our other licensees here today want to weigh in on this debate now? You'll get a chance next year to --

MR. LEBLANC: We have Nordion, Madame la Présidente.

THE PRESIDENT: Okay.

MR. WASSENAAR: Thank you. Richard Wassenaar, for the record.

I just want to echo what was just said.

It matters if we aren't meeting the expectations, but ultimately what we are striving for is that we ensure the protection of both our employees, of the public, and the environment, and that we continuously improve for that and continue to move our programs forward.

How the CNSC ranks us, whether it's Satisfactory or Fully Satisfactory, you know, we've had this discussion before about what's that threshold. But we're aiming to make sure that there are very little to no impacts on our actions and our programs.

THE PRESIDENT: Thank you.

Okay, thank you. Commission Members, anyone with any additional questions?

MR. LEBLANC: We have Dr. Demeter.

THE PRESIDENT: Okay, sorry, Dr. Demeter. Over to you.

MEMBER DEMETER: Thank you.

I think this is just a question so the public gets some comfort.

So there was at the Port Hope Conversion Facility there was a minor transportation industry and they were transporting a UF_6 cylinder. There was no injuries and no release. Given the nature and toxicity of UF_6, it would be good to know at what -- what the packaging is designed for it to survive and not breach relative to a road traffic

accident. So if someone is going the speed limit on roads with this cylinder in the back and they get into a head-on or a T-bone collision, are these packages or these cylinders designed to survive that?

DR. DUCROS: Caroline Ducros, for the record.

I'd like to pass this question to the Transport Licensing and Strategic Support Division.

MR. THERIAULT: Sorry, Martin Theriault, for the record, transport officer with the Transport Licensing and Strategic Support Division.

The packages used to transport the UF_6 cylinders are certified by the CNSC, and to that extent they can survive an accident condition of transport, like a collision on the road or a -- so they're tested for a drop test of nine metres.

THE PRESIDENT: Thank you.

Mr. Jammal?

MR. JAMMAL: Ramzi Jammal, for the record.

Dr. Demeter, with respect to the design of the package itself, it requires certification. And the certification in Canada meets international requirements on the SSR-6, and that takes into consideration the testing of the packaging from damage to fire, to the accident scenario as you mentioned.

Around the world to date, there has not been any reports of the integrity of the package has been compromised. And I can speak from Canadian perspective, all the shipments to date have been done in a safe manner, and the certification itself meets and exceeds international requirements. And it's been accepted, the transport of UF_6 from Canada to other countries, that they're receiving the shipments.

So to conclude, safety is inherent into the design of the package and the testing has been done according to the international requirements for the IAEA. And around the world, we follow exactly the same standards.

MEMBER DEMETER: That helps clarify that. Thank you very much.

THE PRESIDENT: Thank you.

Dr. Berube?

MEMBER BERUBE: Yeah, I have a question for CNSC staff. I just noticed in a number of the Indigenous requests that basically they're looking at inclusion into the IEMP program. Understanding that there's a number of groups that are interested in this and it's, you know, you get to them when you get to them, but if you could run me through the process by which, you know, you inquire as to whether or not they want to be included in the IEMP, how do they get into the IEMP, what do they do

if they're engaged with the IEMP, that kind of process, if you can run through that for me, please.

DR. DUCROS: Caroline Ducros, for the record.

I'd like to pass it to the Health Sciences and Environmental Compliance Division who run the IEMP program.

MS SAUVÉ: Hi. Kiza Sauvé, director of Health Science and Environmental Compliance Division.

You're right, there are a lot of communities that are interested, and we have a lot of IEMP sites. So working with our colleagues in Indigenous Relations, we're working closely with as many communities as we can, especially on the current engagement processes where we're putting into place these engagement procedures, I'll say.

And we're trying to also plan IEMP as far out as well, so we know when we're going to be in each community. One of the challenges we've had in the past is when we meet with communities, we say, We expect to be back in your community in the next couple of years. And that's not really helpful in terms of planning.

So both in terms of trying to understand communities' needs, trying to understand the IEMP planning process, and working with that community to start talking

about what would be useful for them, for the whole part of the process.

So one of our intervenors today said it wasn't helpful to just read documents. So in that case, you know, explaining what the program is, offering to have them come with us while we're sampling has been a huge benefit, we found, in terms of engagement and relationships and understanding the program.

And now one of the things we're working on is the reporting back. So we just received some feedback from a community near the Bruce site that providing them a written report wasn't super helpful. And we recognized that we didn't ask them what their needs were; right? We just made that assumption that providing the information would be helpful.

So now we're working directly with them, back and forth, to figure out how we can provide them information that they can then provide to their community members and how we can make ourselves available to explain, you know, what it is that we're sampling, why we're sampling for certain plants or water, and why we're analyzing for certain radionuclides or hazardous substances. So it really is that listening to what their needs are.

And again, as you mentioned, the planning

process is really important to be able to figure out when we're going to each community, because we know when we go to a community that has a high Indigenous engagement or interest that it does take more time. It takes more time up front and it takes more time for our staff to know how to work with that community.

So it's a work in progress, and I think we're getting better every year, and I hope the Indigenous communities would say the same thing.

MEMBER BERUBE: I'll just add to that, while I've got you here. What we heard earlier on was basically this incorporation of Indigenous knowledge. And I think actually working hand in hand on sampling with the local communities actually adds for a bi-directional educational process. Not only are you explaining and showing them what you're doing, you ask them what they're looking for and then try and track that information, which would be very, very helpful I think even to you.

But beyond that, fundamentally, this is about trust building. And really, this is I guess what you're up to.

But as I indicated earlier, with Indigenous knowledge, it shifts from every reserve or every First Nation, every new group, and tracking that information and basically trying to get to the point where

you have some critical things that you have to look at and discuss with the local populace is really, really critical. For instance, you know, what does it smell like? Not something you capture; right?

So this is a big deal. So we got to get to a point where we're communicating on that level.

MS SAUVÉ: So I'm going to pass to Clare Cattrysse as soon I'm done. But I want to give you one more example of an Indigenous knowledge that was really fascinating.

Up near the Blind River Facility when we were meeting with the Mississauga First Nation, we were explaining why we sample. You know, we take a couple, one or two samples upstream and then most of our samples are downstream.

And then someone in the meeting just said -- they kind of sat there and they looked a little bit confused, and they said, "But when I'm standing in the river upstream, I feel the water rushing upstream. I think it's because when the dam opens or closes, but I don't know, but I feel that on me." And so we said, "Okay. We'll add a couple more. You know, show us where, and we'll add a couple more of those samples upstream." So and then when we go back and we talk to that community, we can explain why we've done those samples upstream.

So I'll turn it over now to Clare.

MS CATTRYSSE: Hello, thank you. My name is Clare Cattrysse, and I am the director of the Policy Aboriginal International Relations Division.

Just to add a little bit to what Kiza said, we do hear you, Dr. Berube. We definitely talk to the groups regularly about the Indigenous knowledge. A number of the groups have prepared for us IK and TKLUS studies. And the information in those studies, we have working groups within our organization where we sit down with all the environmental specialists and talk about the different components, and we have a framework, a policy framework on how to use this, and which we're actually engaging with Indigenous groups on right now.

And what we're doing is then what we do is we create these "What we heard" reports, and we take what we've heard, and then sitting down with the communities and asking them, Did we capture some of the issues appropriately? And where would you see value in bringing this to the table?

And so that's where Kiza's team has been brought in quite a lot, because there is great interest in the independent environmental monitoring program. And we have an internal group within CNSC where we work with Kiza's team, where our team is bringing forth all the

potential licences, timing, and issues into the planning process so we can get out as early as we into the communities to find out where they might want to get engaged and on what kinds of issues so we can bring them in earlier and earlier.

So this has been happening over the past couple of years quite intensively. And we also do offer a participant funding program, some funding assistance for this too.

So that's a little bit of a snapshot of the work we're doing. Thank you.

THE PRESIDENT: Okay. Thanks very much.

Dr. Lacroix?

MEMBER LACROIX: Yes, thank you. Dr. Demeter raised his concern about the safety of the UF_6 packages. And what about the security of these packages? This a highly strategic substance, and I would like to hear from staff. There must be some security surrounding the shipment of these containers.

DR. DUCROS: Caroline Ducros, for the record.

I'd like to pass this to the Nuclear Safety Division for a response.

THE PRESIDENT: So Mr. Jammal has got his hand up, so while we're waiting, maybe you can start, Mr.

Jammal.

MR. JAMMAL: Ramzi Jammal, for the record.

I would like to confirm to Commission Members -- I will keep it at a high level -- but security plans takes place prior to any shipment that is being performed with such type of materials. Such type of materials is controlled under nuclear material requirements, and so they are -- every licence -- sorry, every shipment requires a licence which will include the security plans. So the security is already embedded in the transport.

Without going into any details, I confirm that security is taken into consideration. And the same thing applies for the recipients. So we apply -- even though security is one element, we apply the permit preparation requirements according to Canada's policy and international obligations.

MEMBER LACROIX: And how many kilograms of UF_6 are shipped every day -- every year, I'm sorry, in Canada?

MR. JAMMAL: I do not have that information. I will take it into consideration and I will get back to you. But if Cameco has it, if it's not a business prescribed information, if they have it at their fingertips, they can mention it. If not, we will have to

evaluate how we can provide you with the information without compromising any prescribed information.

MEMBER LACROIX: Okay. And most of the time I presume they're shipped by truck, but are they shipped by train?

MR. JAMMAL: Ramzi Jammal, for the record.

I have to refer to the transport experts on this or my colleagues and project officers. I'll give them opportunity to answer and I'll get back to you if --

MEMBER LACROIX: Okay.

MR. JAMMAL: -- if there's any complementary response --

MEMBER LACROIX: Thank you.

THE PRESIDENT: Why don't we ask Cameco to answer those questions? Cameco?

MR. MOONEY: Liam Mooney, for the record.

And in relation to the volumes of UF_6, that is confidential, as Dr. Jammal had indicated.

With respect to the question on transportation, we do not ship any Class 7 materials currently on -- by rail. So that leaves the road option.

MEMBER LACROIX: Okay, thank you.

MR. MOONEY: I think it's important to recognize what Dr. Jammal had indicated earlier. We have moved, for many years as Cameco and before that as

Eldorado, UF_6 and with no incident that is worthy of mention. And I think that speaks to the overarching international framework that we comply with and the security of the containers, the packages themselves that is -- allows us to safely transport this material all over the world.

MEMBER LACROIX: Okay. Thank you.

DR. DUCROS: Caroline Ducros.

From the CNSC's perspective, I think the Nuclear Security Division would like to add the CNSC's role here.

MR. THOMPSON: Hi, Craig Thompson, for the record. I'm a security advisor with the Nuclear Security Division at the CNSC.

So for the purposes of licensees' packaging for the security SCA, they're required to submit specific security requirements to the CNSC on their security protection measures. So that was what Ramzi was talking about earlier with the transportation security plan.

So there is no specific qualifications for the UF_6 transport containers for security; however, one of the expectations is that they're adequately secured to the transport modes for the duration of the transport.

Specific qualifications on licensees'

physical barriers for the purpose of security would be prescribed information, so we don't want to go into exactly what our review would be for specific measures as they're installed on the licensees' transport measures in the form of transport. But so we can discuss those further in camera if the Commission would like some more information on that.

But in terms of our general expectations for security while in transport, those are public, and that's identified in REGDOC-2.12.3 Security of Nuclear Substances: Sealed Sources and Category I, II, and III Nuclear Material.

THE PRESIDENT: Thank you.

Dr. Berube?

MEMBER BERUBE: Yeah, I just have one final question here for Cameco, to Port Hope.

I note that you said that basically this current disposition of your Vision In Motion project's about 50 per cent complete or 50 per cent reduction in actual waste at this point. And I'm just wondering, you know, how your future looks on this project. When do you intend to actually get down to a point where that's mitigated to next to nothing? If you just bring us up to speed on that.

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

record.

And why don't I ask Tom Smith to respond to that, as this project is near and dear to him.

MR. SMITH: For the record, Tom Smith.

We anticipate wrapping the project up in about 2024. As you indicated, we're about 50 per cent the way through of our accumulated waste, so I would expect it's going to take us about another two to three years to wrap that up.

However, in addition to the accumulated waste, we will be tearing down structures on the main site, which will result in a large volume of building debris. And we plan on doing a number of significant excavations to remove source material from the main site, which will also result in a lot of additional shipments to the LTWMF.

I think in our presentation we indicated to date we've shipped about 23,500 cubic metres. We have an allocation of 150,000. We probably won't use all of it, but we'll probably end up somewhere over 100,000 cubic metres shipped from the project in aggregate. But basically LTWMF appears to be going to close in 2024, so we're working with that schedule to complete our project in that timeframe.

THE PRESIDENT: Well, thank you very much. I don't see any more hands up, so I think we've exhausted

all our key questions.

So this concludes the public meeting of the Commission for today. I'd like to extend our special thanks to staff, to the licensees and the intervenors for your participation today.

And our meeting will resume at 9 a.m. tomorrow. So thank you all again for participating today. Bon fin de journée. Bye bye.

--- Whereupon the meeting adjourned at 2:34 p.m.,
to resume on Wednesday, December 9, 2020
at 9:00 a.m. / La reunion est ajournée
à 14 h 34 pour reprendre le mercredi
9 décembre 2020 à 9 h 00