

**Canadian Nuclear
Safety Commission**

**Commission canadienne de
sûreté nucléaire**

Public meeting

Réunion publique

December 12th, 2019

Le 12 décembre 2019

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

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

Commission Members present

Commissaires présents

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Dr. Sandor Demeter
Dr. Timothy Berube
Dr. Marcel Lacroix**

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M. Timothy Berube
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Avocate-générale principale :

Ms. Lisa Thiele

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Ottawa, Ontario / Ottawa (Ontario)

--- Upon commencing on Thursday, December 12, 2019
at 9:01 a.m. / L'audience débute le jeudi
12 décembre 2019 à 9 h 01

Opening Remarks

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

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

I would like to begin by acknowledging that the land on which we are gathered is the traditional territory of the Algonquin and Anishinabek Peoples.

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

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

On my right is Dr. Sandor Demeter, and on my left are Dr. Marcel Lacroix and Dr. Timothy Berube.

Also joining us on the podium today is Ms Lisa Thiele, the General Counsel, and Mr. Marc Leblanc, Secretary of the Commission.

I will turn the floor to Mr. Leblanc for a

few opening remarks.

Marc...?

M. LEBLANC : Merci, Madame le Présidente.

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

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.

Des appareils pour l'interprétation sont disponibles à la réception. La version française est au poste 2, and the English version is on channel 1.

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

The transcript should be available on the website of the Commission sometime next week.

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

As a courtesy to others, please silence your cell phones and other electronic devices.

I note that this is the continuation of a

meeting that started yesterday. We mentioned yesterday that the documents are available on the website, all the CMDs, and that the agenda was approved yesterday.

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

President Velshi...?

THE PRESIDENT: Thank you.

The first item on the agenda is the Status Report on Power Reactors, as outlined in CMD 19-M48.

I note we have representatives from the nuclear power plants and CNSC staff in the room or remotely. They can identify themselves later, before speaking.

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

CMD 19-M48

Oral presentation by CNSC staff

MR. SIGOUIN: Thank you.

Good morning, Madam President and Members of the Commission.

My name is Luc Sigouin, I am the Director

of the Bruce Regulatory Program Division and I am making this update on behalf of Mr. Gerry Frappier, the Director General of the Directorate of Power Reactor Regulation.

With me today are other regulatory and technical managers and specialists.

The Status Report on Power Reactors, CMD 19-M48, was finalized on December 4th. The following are updates reflecting changes since that date.

For Bruce, Unit 2 is now at 70 percent reactor power, having returned to service following its planned outage. Increases to full reactor power will occur over the next day or so, following normal procedures.

For Darlington, Darlington Unit 4 shut down late in the evening on December 10th due to a steam leak on the secondary side.

For Pickering, a fish impingement event occurred on November 22nd, 2019 at Pickering. OPG notified Fisheries and Oceans Canada and also reported this to CNSC. CNSC staff are continuing to monitor further developments of this and will assess the event as more information becomes available.

And finally, there is no additional information for Point Lepreau.

This concludes the Status Report on Power

Reactors. We are available to answer any questions that you might have.

THE PRESIDENT: Thank you, Mr. Sigouin.
Dr. Berube, any questions?

MEMBER BERUBE: Yes, questions with regard to Darlington actually, first of all on the refurbishment activities. Is the fuel load complete yet or where are we in that process?

MR. SIGOUIN: Luc Sigouin, for the record.
So yes, the hold point for fuel load was lifted and the fuel load is complete.

And I wonder if our colleagues from OPG on the line can comment.

--- Technical difficulties / Difficultés techniques

MR. MALEK: This is Imtiaz Malek, Reg Affairs at Darlington Refurbishment.

Indeed you are quite right, Mr. Sigouin, the fuel load is complete and we are proceeding to heat transport fill around about the end of December.

I have with me Monsieur Marc Paiment, the Director in Refurbishment, and he will give you a brief update on refurbishment as well as the status we're at at the moment.

Marc...?

MR. PAIMENT: Do you want that now?

MR. MALEK: Yes.

MR. PAIMENT: Okay.

So the status of refurbishment as we stand at this point is that we are at the tail end of installation of our instrument tubing which will complete the final pressure boundary work for the retube and feeder replacement project.

Following the subsequent system available for service, we will begin filling the heat transport system with heavy water on or about the 28th of December.

In parallel with the filling of the heat transport system, we are beginning restoring the reactor vault to its configuration as we entered refurbishment and following that we will be proceeding with the containment pressure test and approach to critical, which is currently scheduled on or about the 4th of April.

Are there any questions for me?

MEMBER BERUBE: And with regard to the Unit 4 steam leak on the secondary side, what is the nature of that? How big is it? Is it severe? What is the consequence here?

MR. SIGOUIN: Luc Sigouin, for the record.

So just a quick comment and then we can

turn it over to OPG.

So the steam leak was indeed on the secondary side. It was discovered by OPG and the unit was taken down in a normal fashion per procedure. They have undertaken an investigation and CNSC staff is following up on that as well. So I assume that OPG can provide some additional information on that.

MR. KHANSAHEB: Yes. This is Zar Khansaheb, for the record.

The crack size was approximately 12 inches around circumferentially on the weld. It was a very thin crack with a very small amount of steam coming through. We did notice that steam leak late last week and ended up shutting the unit down, as was stated before.

THE PRESIDENT: I guess we just want confirmation that there are no public safety consequences as a result of that.

MR. KHANSAHEB: It's Zar Khansaheb, for the record.

There were no public safety consequences as a result.

THE PRESIDENT: Thank you.

Dr. Demeter...?

MEMBER DEMETER: Thank you.

I had a question regarding the ongoing KI Pill Working Group update.

The third bullet talks that the draft Phase 1 report will be posted for 30 to 45 days for a public review period following concurrence by the Working Group members.

The public most affected by this are in the ingestion planning zone and I wanted to get a sense from you, how do you ensure that the individuals, the public knows where to look for this? Are you somehow targeting individuals or how are you notifying people that you want feedback from to comment on this?

MR. SIGOUIN: Luc Sigouin, for the record.

I will pass this over to Lee Casterton, who is project managing this activity within CNSC. Obviously we want to make sure that the people affected by this will have an opportunity to review the comments and I understand that that is being addressed as part of the communication activity for the outreach and the consultation. So I will pass it over to Mr. Casterton, who can fill in additional details.

MR. CASTERTON: Hello. Lee Casterton, for the record. I am the Chair of the Potassium Iodide Pill Working Group.

So what we will be doing is developing a communications plan and that plan will determine how we target the various individuals within the ingestion planning zone. So we will be using things like social media. We do have Facebook and Twitter where we will be pushing that message out and we will also be looking to utilize some of our members and some of the communication strategies that they have as well. So we will be able to target everyone within the IPZ through our outreach.

MEMBER DEMETER: Thank you.

THE PRESIDENT: Mr. Casterton, for the KI Working Group I think what would be helpful as you provide us regular updates is what are your key activities with their milestones and how are you progressing towards those. So in the future, you know, as opposed to we met and we are waiting for minutes and all that, it would be helpful for us to be able to track progress that you are making.

Dr. Lacroix...?

MEMBER LACROIX: Yes. Concerning Bruce Unit 2, is it back in service right now?

MR. SIGOUIN: Luc Sigouin, for the record.

So Bruce Unit 2 is now at 70 percent power and it is ramping up to 100 percent over the next day or so.

THE PRESIDENT: Dr. Berube...?

MEMBER BERUBE: And with regard to Bruce, I am just curious as to the status of the Class II power transformer on Unit 8. Has that been replaced and is that back in service yet? What is the status on it?

MR. SIGOUIN: Luc Sigouin, for the record.

I understand that Mr. Maury Burton from Bruce Power is here and he can provide an update on that.

MR. BURTON: Maury Burton, for the record. I am the Senior Director for Regulatory Affairs at Bruce Power.

Just to update on TSS8, it is actually a Class III -- or a Class IV transformer, so it takes power from the grid and supplies it to the unit generally when the unit is shut down. We do have redundancy there obviously or we wouldn't be running the station.

For that, we were expecting the transformer to be delivered at basically this time and installed by the end of the year. However, the company that is manufacturing the transformer has had some delays in the manufacturing process, so we do not expect it until the end of January now and the current plan is to have it installed and operational by the end of March.

MEMBER BERUBE: And with regard to the

transformer failure, did you ever ascertain what was the root cause?

MR. BURTON: Yes. The root cause was a fault with a tap changer. So the linkage in the tap changer -- and apparently this was a known issue from the manufacturer that wasn't shared broadly in the industry -- but it caused the linkages to become loose, which caused an arcing effect and resulted in the failure of the transformer.

THE PRESIDENT: Dr. Demeter...?

MEMBER DEMETER: Just a follow-up. President Velshi talked about wanting the timelines for the KI pill and I took the opportunity to look at the KI Pill Working Group webpage on the CNSC and it's excellent, and so a hotlink embedded in updates would really be helpful because then you can go straight there instead of having to find it. But it has a nice sort of timeline chart and where you are at and the minutes and stuff, so that would be really helpful.

MR. SIGOUIN: Luc Sigouin.

Noted. We will endeavour to include that in future updates.

THE PRESIDENT: Great. Thank you.

Any further questions?

Thank you very much for the update.

CMD 19-M49

Written submission from CNSC staff

THE PRESIDENT: The next item on the agenda is an update to clarify an incorrect response from CNSC staff to a matter discussed during the May 30th, 2018 Bruce Part 2 hearing on the elevation of diesel generators at the Bruce Nuclear Generating Station, as outlined in CMD 19-M49.

I do want to acknowledge that the need for this clarification came about as a result of a letter from an intervenor that was received by the CNSC, advising us of the inaccurate or incorrect response from CNSC staff.

We have representatives from CNSC staff as well as representatives from Bruce Power to answer any questions that Commission Members have.

Mr. Sigouin, do you have anything to add before I open the floor up to questions?

MR. SIGOUIN: Luc Sigouin, for the record. Thank you, Madam President.

Just to add, I think the note is self-explanatory. We are available to answer any

questions, but I just want to highlight the conclusion of the note that any analysis that was done and staff assessments that were done as part of the licence renewal and that were included in the licence renewal CMDs were based on the actual elevation of the backup generators, not on the incorrect elevation that was reported. So given that the analysis in the CMDs and the recommendations that were made were based on the correct elevation, this does not change CNSC staff's recommendations that were made in relation to Bruce relicensing renewals in 2018.

So we are available to answer any questions.

THE PRESIDENT: Dr. Demeter...?

Dr. Lacroix...?

MEMBER LACROIX: I'm just curious, how many of these generators are there?

MR. SIGOUIN: So there are two -- Bruce Power, correct me if I'm wrong, but there are two pairs of backup generators at each station, so there are four generator units at each station, a total of eight at Bruce Power.

MR. BURTON: Maury Burton, for the record.

I will just add to that. There are four generators for Class III power at both stations. At Bruce

B there are three emergency power generators as well, and at Bruce A two what we call qualified power generators, because they were not part of the original design of the station, they were back fit into the station back in the '90s.

MEMBER LACROIX: And what is the power of each generator?

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

For the standby generators, the Class III generators, they are approximately 12 MW each; the EPG, emergency power generators, at Bruce B are approximately 5 MW each; and the qualified power generators at Bruce A are 2 MW each.

MEMBER LACROIX: And I presume that these generators are tested on a regular basis?

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

Yes, they are tested on a regular basis, with full preventive maintenance programs as well and regular scheduled outages for maintenance.

THE PRESIDENT: Dr. Berube...?

MEMBER BERUBE: Just a little more detail. They are all of the type of turbo generators, right, based

on an aircraft type engine; is that correct?

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

All the Class III ones are. Two of the emergency power generators at Bruce B are of the turbine type. The remainder are diesel engine generators. It's just the ones that were back fit later we decided to go with a different technology.

MEMBER BERUBE: Because the elevation of this is actually quite a bit lower than what we were led to believe to begin with, what is the maximum wave height recorded in the Bay? I mean are we at any risk at all here of flooding?

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

We have looked at this quite extensively for our probabilistic safety assessment for external flooding. In the Great Lakes we have seen waves as high as 10 metres, but that is generally in the middle of the lake. You typically see possibly up to 3 metres close to shore because of the shallow water in those areas.

The generators -- I do actually have a presentation here that I had as backup and it may be helpful to show one of the slides here on water levels and

where we are.

So it shows a current lake level at approximately 177 metres and historical levels have gone from basically around 175.78 up to 177.5. The average level that we take is 176. Our generators are located at 180.14 metres, and these are above sea level for reference.

So in general where these are located, they are quite a distance from the Lake. This is the Bruce A ones and you can see where they are. When we did the PSA work we did look at waves, and waves that were probably not possible up to 10 metres, along with a heavy rain and the flooding in the area, we got to about 10 centimetres, which wouldn't affect the operation of these. Mainly it is because the drainage in the area, we have both the forebay and the outflow where the water would tend to drain fairly quickly in those areas.

And similarly, at Bruce B there is more separation between the standby generators and that is one of the principles that newer stations follow. And similarly, we have them located fairly closely to the forebay in one case for the emergency power generators and one set of the standby generators. The other set of the standby generators is located farther away from the forebay and it is actually more susceptible to flooding than the

ones closer to the forebay and we see about 30 centimetres of flooding there and that is taking wave action plus 100-year rain to get to that. So in general the risk is very low.

MEMBER BERUBE: And I was looking at where you have them, actually the setback is pretty -- it looks okay, but your ability to crosstie all these generators is there?

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

We can crosstie them in the station, but not between the two stations. So the Bruce B generators can only power Bruce B and the Bruce A generators can only power Bruce A, but our OP&P limits are two available with all four units running and they are capable of allowing all four units to cool down safely.

MEMBER BERUBE: And just CNSC basically are looking at this obviously. What is your opinion on the situation, given the reduction in height?

MR. SIGOUIN: So just to clarify -- Luc Sigouin, for the record.

The CNSC staff recommendation that was made during licence renewal was based on the actual height and actual location of the diesel generators -- of the

backup generators. It took into consideration flooding and storm surge and wave action, and CNSC staff's position of this, our assessment is that the installation is safe. The information that was provided at the hearing was incorrect, but the analysis that was the basis of the recommendations in the CMD was correct. So our assessment has not changed.

MR. LEBLANC: If I may, Madame la Présidente, I would just like to note that we will put this document as a CMD, so it is going to be available on the website for anyone who wants it.

And I would just like to give notice, Mr. Burton, that if you want to use slides you have to ask the permission of the Commission to enter it into the record for the next time, but certainly the Commission appreciates that you had those slides available. Thank you.

THE PRESIDENT: Thank you.

My question is more around the process for correcting the record. This happened in May of 2018. It's a year and a half later that it's now coming in front of the Commission and, frankly, it is because of the persistence of the intervenor. So, staff, tell me about -- surely in our history all these years we must have had incidents where the record had to be corrected because correct information had not been provided at a hearing.

How do we make sure that there isn't this long a time and what is the process to make sure we rectify the record without depending on intervenors to identify that for us?

MR. SIGOUIN: Thank you. Luc Sigouin, for the record.

So, Madam President, you are correct, it happens on occasion that the record needs to be corrected. As Commission Members may have noted, it can happen during the same proceeding where staff will come back and correct the record.

In this case, the ongoing process of remediating something that we realized after the fact that it was inaccurate. And in this case it was highlighted by an intervenor; we hadn't realized until we reread the transcript that it was incorrect.

So there's kind of an informal internal approach to managing that, but there's kind of a team approach between the secretariat and staff on how to manage this. And in this case, while we managed correcting the information internally within and with the intervenor, we had overseen the more formal process of correcting the record with the Commission. So we're playing catch-up now.

So I think that's a bit of a lesson learned for staff and the secretariat that we will ensure

that when we come across these corrections in the future, we will endeavour to provide the corrected information to the Commission more promptly.

MR. LEBLANC: And if I can complement that information, or supplement it, we are developing from this experience a formal process for the correction of record that will be incorporated into the management system, so we will not do things informally and internally.

And we had addressed the matter directly at that time; staff had communicated with the intervenor, but we needed to do it more formally, and that's what we'll do in future. And we had not had any cases in the past that had to come before the Commission that had not done so. I'm not saying there were not things that needed to be corrected, but this one highlighted the fact that we need a process to do so. So thank you.

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

The next item -- I think we'll need to change players here, so I'll give you a couple of minutes to do that before introducing the next item.

--- Pause

CMD 19-M50

Written submission from CNSC staff

THE PRESIDENT: Okay, the next item is the event initial report regarding atmospheric emissions exceeding the licence limits, as outlined in CMD 19-M50.

Representatives from Jubilant Draximage Inc. are joining us remotely to be available for questions. They can identify themselves later when speaking.

Mr. Moses, do you wish to add anything before we move to the questions?

MR. MOSES: Yes, I do, thank you and good morning, President, Members of the Commission. I am Colin Moses, director general of the Directorate of Nuclear Substance Regulation, and I have Mr. André Bouchard, director of the Operations Inspection Division, Mr. Sylvain Faille, director of the Nuclear Substance and Radiation Licensing Division, and Mr. Mike Davey as well as other specialists involved in the review of this event.

CNSC staff are here to provide an event initial report to the Commission related to an exceedance of a weekly release limit for Iodine-131 at the Jubilant Draximage Incorporated, Kirkland, Quebec, facility.

As outlined in CMD 19-M50, the CNSC was

informed of this exceedance on November 20th, 2019. While the release exceeded the weekly limit, it was well below any level that could have an impact on the public or the environment, and further, overall annual releases from the facility remain at acceptable levels.

The licensee is exploring a number of potential causes for this exceedance, and we were informed late yesterday the vial had decayed to a level at this point that allowed for closer examination, and we understand that there were indications that might suggest exterior contamination on the vial, although when and how the contamination occurred is still yet to be determined.

CNSC staff will continue to monitor the progress of the licensee's investigation of this event in order to determine the adequacy of their corrective actions, and staff remain available for any questions you may have.

THE PRESIDENT: Thank you, Mr. Moses.

Mr. Chettah, did you wish to add anything?

MR. CHETTAH: No. No, it's okay.

MS SIMONEAU: Can you speak a bit louder?

MR. CHETTAH: No, I don't have something to add to this.

MS SIMONEAU: Do you hear us?

THE PRESIDENT: Just barely.

MS SIMONEAU: Mr. Chettah say that he don't have anything to add.

THE PRESIDENT: Okay, thank you.

Well, we'll open the floor to Commission Members for questions.

Dr. Berube? No. Dr. Demeter?

MEMBER DEMETER: Thank you.

A question for Draximage. It was comforting to see that the thyroid monitoring didn't demonstrate any uptake. I suspect you do routine hand monitoring. Was there any skin contamination that was noted?

MR. CHETTAH: No, there wasn't. It happened inside the box, and no, there wasn't skin contamination.

MEMBER DEMETER: Okay, because if it was -- looking at the possibility of external contamination, I didn't know where in the chain that happened. So that's why I asked that question.

MR. MOSES: And -- Colin Moses -- if I could maybe just add as well, so the unpacking of the vial takes place within the hot cell and it's done remotely, so it's unlikely to have a direct -- there is no direct

contact, particularly at the levels when the vial is first taken in. It needs to be handled remotely for radiation protection purposes.

THE PRESIDENT: Dr. Lacroix?

MEMBER LACROIX: It is mentioned in the event initial report that the iodine-131 supplied by NTP Radioisotopes is more volatile. So that means it's a different solution? Could you explain, you know, elaborate on this, please?

MR. MOSES: Colin Moses, for the record.

So maybe I'll let the representative from Draximage answer that question.

MR. CHETTAH: That's something that we suspect when it happened, but according to the supplier there's no -- any change in formulation. It is the same formulation. But we -- it's something that we expect at the beginning when it happened, because we have another supplier, IRE in Belgium. And because this didn't happen when we order NTP raw material. It happened -- and we order NTP material only this week. Since two years ago we didn't order iodine from this supplier. That's why we were expecting that it's possibly due to the formulation. But as today, it seems that there's no indication that the formulation has changed or ...

MEMBER LACROIX: I just want to know, when it is delivered to you, it's in a container where the iodine-131 -- is it dissolved into a solution? Okay.

THE PRESIDENT: Dr. Berube?

MEMBER BERUBE: I mean, obviously, you had a little bit of time to look at this. What is your -- I mean, still supposition, you're just guessing at this point, but what would you say is probably the most likely cause here?

MR. CHETTAH: Sorry, I don't understand the question.

MEMBER BERUBE: Well, I'm trying to understand why this event has happened. What do you think has actually caused it? I mean, you must have some intuitive sense as to what it is. Take a guess. What's your best guess?

MR. CHETTAH: My best guess is there was contamination outside the vial. There's -- the guess is the vial leaks during the shipping or -- that's what we are exploring now, if there is some leaks during the shipment of this package. Just yesterday I send another report to Mr. Michael Davey.

MS SIMONEAU: Can you speak louder?

MR. CHETTAH: Yeah. We examined the vial

itself, because it decaying now. It decay enough that we can observe it. We didn't open it yet. We did that inside the box, safely. We identify some spots outside the vial. Some spots, white spots indicating that the iodine dried. That confirmed that there was outside contamination. And for us, as you say, our guess is this volatility was due to the contamination, to the external contamination of the vials.

THE PRESIDENT: So I know you have stopped shipments from this particular supplier. But if that is indeed what caused this, are you taking any additional precautions from supplies from other suppliers, just to make sure that there is no surface contamination of vials?

MR. CHETTAH: Additional ... there is not -- we don't take especially additional measures for the other supplier, because historically it never happened. For sure, when we receive the vial, we don't swipe it or we don't -- we didn't check -- we don't check the external contamination. But the supplier guarantee for us that they do that at their side.

And that's a question we ask to NTP the first day when it happened. We had a call with them and asked them is there a possibility that something happened, why we had this contamination. They say that there was no

deviation on their procedure.

But we are still exploring that, so we are still doing our investigation. As I mentioned, we have -- we still have the vial, so we can analyze it in the future. Perhaps there is a crack or -- it's a guess -- a crack in the cap or in the vial itself, if there is a default in the vial, in the top of the vial itself. We can see that in a few weeks, because now it's still radioactive, we can't really analyze it.

But that's -- so the additional condition measure we took, we inform the supplier of this. And on their side, they are saying that they will do a follow-up to see what would happen. And it's still ongoing; our investigation is still ongoing. We don't have final result for that.

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

Mr. Moses, I understand that you also want to bring to the attention of the Commission another event that occurred over the weekend. The floor is yours.

Oral presentation by CNSC staff

MR. MOSES: Yes, that's correct. And,

again, I'm Colin Moses, for the record.

And so CNSC staff would like to provide an additional update to the Commission with respect to an event that occurred on Friday, December 6, 2019. So that was last Friday.

At 9 p.m. Friday, the CNSC duty officer was contacted by the radiation safety officer for Suncor Energy Inc. to inform us about a fire that had started at their MacKay River Facility.

The affected building, it contains four insertion-type fixed gauges under a CNSC nuclear substance and radiation device licence. And each gauge includes five 1.85 GBq Cesium-137 sources.

So during firefighting operations, the emergency personnel did maintain a perimeter distance from the facility. And once the fire was extinguished on Saturday, surveys were conducted around the building perimeter and in any locations that were accessed by the response personnel. All survey readings were and remain at background level, and all persons entering the area did wear personal electronic dosimeters, which did not record any doses above background levels.

The building did sustain, however, some structural damage and as such the safety of the building

needs to be verified before the licensee personnel can access the gauges to verify their integrity directly. However, they were able to perform some visual verification to the gauges, which appear intact and still mounted on the vessels.

The source assemblies are in the extended position, which is the safe position. They are inserted in the gauge and levels around that vessel are appropriate for workers during normal operation and are safe at this stage. And they'll remain there until the operability of the gauges can be assessed.

CNSC staff continue to monitor this situation and we will update the Commission once we receive confirmation that the sources and the gauges have been secured and safely recovered, and we remain available for any additional questions you may have.

THE PRESIDENT: Thank you. Dr. Lacroix, any questions? Dr. Berube?

MEMBER BERUBE: Do you know if gauges were actually in physical contact with the fire itself?

MR. MOSES: Colin Moses, for the record.

So at this stage, no, though the gauges -- so the way the gauges work is they're mounted on the exterior of a vessel and they're inserted in a dry well or

essentially a steel pipe on a chain or on a stainless steel cable. And that's within a thick-walled vessel that contains a slurry. And so the fire burned around, but these vessels are built to withstand certain emergency situations, so it's unlikely that there's direct contact with the fire with the sources.

With that said, it is conceivable that there could have been extensive heat exposure, and so that's where we'll be able to verify that.

MEMBER BERUBE: I didn't realize that the actual source was inside the tank. What was inside the tank?

MR. MOSES: Colin Moses, for the record.

I'm not a hundred per cent sure, but maybe I'll turn to my colleagues in the Calgary office in the Western Regional Office who might be able to provide some details there.

MR. LARKIN: Peter Larkin, for the record.

We understand that there's slurry inside the tank or there was certainly slurry present in the tank before the fire. Inside the tank, though, there are four sources -- sorry, there are five sources attached to a stainless steel cable. Each source is 1.86 GBq for a total of 250 mCi, so about 9.25 GBq on the entire length of that

cable. They're inside a stainless steel shaft or stainless steel dry well.

MEMBER BERUBE: Just one more question with regard to that. Were the tanks compromised at all? Is there any visible sign of tank compromise?

MR. MOSES: Colin Moses, for the record. So no, at this stage the tanks appear intact, but again, that's from distance verification. In fact, we had asked -- hoped to provide some pictures to you, but it's not even safe to access to get in that could give any visual indication. So no guarantees at this stage, but they do appear intact, and it is not unlikely that they remain intact.

THE PRESIDENT: Dr. Demeter?

Okay, well, thank you very much for that update, and we look forward to any other future updates that you have on the incident. Thank you.

Okay, we're ready for our next agenda item on uranium mines and mills regulatory oversight report.

The next item on the agenda is the *Regulatory Oversight Report on Uranium Mines and Mills in Canada: 2018*, as outlined in CMDs 19-M36 and 19-M36.A.

The public was invited to comment in writing. The Commission received nine submissions. Two

Aboriginal groups will be making an oral presentation. We will get back to the interventions after CNSC staff's presentation.

Before turning the floor to CNSC staff for its presentation, I would like to acknowledge that representatives from the Saskatchewan Ministry of Environment and the Saskatchewan Health Authority are joining us remotely, to be available for questions. They can identify themselves later during the question period.

I will turn the floor to CNSC staff for their presentation. Mr. Fundarek, over to you.

CMD 19-M36/19-M36.A

Oral presentation from CNSC staff

MR. FUNDAREK: Good morning, President Velshi and Members of the Commission. My name is Peter Fundarek, and I'm the director of the Uranium Mines and Mills Division. With me today is Ms. Haidy Tadros, director general of the Directorate of Nuclear Cycles Facility Regulation, and Mr. William Stewart, senior project officer in the Uranium Mines and Mills Division.

We also have licensing and compliance verification staff, as well as subject matter experts with

us here in Ottawa and by videoconference from the CNSC's office in Saskatoon to help answer any questions that the Commission may have.

Representatives from the Province of Saskatchewan are also in attendance through the Saskatoon office.

We are pleased to present to the Commission, Commission Member Document 19-M36, titled *Regulatory Oversight Report for Uranium Mines and Mills in Canada: 2018*. This is the eighth annual report for the uranium mines and mills and represents a significant resource allocation, over 450 person days during the last year, pointing to the high value that we see in communicating the effectiveness of our regulatory oversight.

This is also the fifth regulatory oversight report that is being presented to the Commission in 2019. As per the usual process, the public was provided 30 days to review the information in the report, and has been invited to intervene on these reports.

Our presentation today starts with an overview of CNSC staff's activities and the programs in place to verify compliance and is in line with previous regulatory oversight reports. This presentation will

provide a summary of the performance across operating uranium mines and mills for all 14 safety and control areas, with a focus on radiation protection, environmental protection, and conventional health and safety.

Additional specific information for each uranium mine and mill will also be discussed in the report.

The report for 2018 only includes information regarding the five mines and mills that were identified as operational. Reporting on historic and decommissioned sites was last reported on as part of the 2017 report, and will be reported again as part of the 2020 report.

Staff will also provide responses to key themes and topics of concerns raised in interventions before providing conclusions.

CNSC staff identified an error in CMD 19-36, page 110, Appendix B, Table B-1. The inspection list for McArthur River is not correct in that document. The correct list of inspections for McArthur River is shown in this slide and will be corrected in the published ROR. This does not impact the data or discussion on SCAs covered on this report.

Another error was noted when reviewing the appendices of the ROR. In this case, one event which was

included in the text to the ROR was not added to the summary in Appendix J. As noted from the information provided in section 6.3 of the ROR, a short duration event resulted in an exceedance of effluent limits of pH from the reverse osmosis water treatment plant and was excluded from Appendix J of the ROR. This information will be added to Appendix J in the published ROR, and this does not impact any of CNSC staff's conclusions contained within the ROR. We apologize for any confusion these oversights may have caused.

I will now present the highlights from the regulatory oversight report on uranium mines and mills.

This report includes a summary of the CNSC's regulatory efforts; compliance verification activities at uranium mines and mills; an overview comparing licensee performance across Saskatchewan uranium mines and mills for all 14 safety and control areas with a focus on radiation protection, environmental protection, and conventional health and safety; and an update on licensing activities and significant events.

The nature of the CNSC's regulatory oversight is commensurate with the risk associated with the licensed site according to their licensed activities and program, and the performance by the licensee. The base

level of risk is reflected in CNSC Staff's facility-specific compliance verification plans, which include the number and scope of inspections. The plans are regularly reviewed and, if need be, revised.

CNSC compliance verification activities are primarily in the form of desktop reviews by UMMD staff and other CNSC specialists. This comprises some 74 percent of CNSC effort and includes reviews of licensee documentations, operations reports, event reports and responses to CNSC Staff queries.

Approximately 26 percent of CNSC effort is involved in on-site compliance verification activities, which may include CNSC specialists or other CNSC Staff. On-site verification can be focused inspections targeting one specific safety and control area or may be more general in nature and encompass a wider range of criteria.

To keep the public informed of regulatory activities occurring at mine and mill facilities, CNSC Staff regularly engage with the public, Indigenous groups and their leadership through attendance at community meetings, site tours and technical information sessions.

In addition to these outreach activities, the CNSC also provides information through the CNSC web site and social media and also communicates with Indigenous

leadership and representatives through telephone, emails and letters.

In 2018, CNSC Staff participated in community activities, including Northern Saskatchewan Environmental Quality Committee meetings, a meeting with Indigenous communities regarding the *Nuclear Safety Control Act*, regulations that apply to uranium mines and mills and participant funding, participation in the Saskatchewan Mining Association annual conference and environmental forum and information sessions on the Regulatory Oversight Report for uranium mines, mills, historic and decommissioned sites in Canada 2017.

During the ROR presented in December of 2018, Indigenous community members expressed concerns related to the amount of technical information and data provided in the ROR, their ability to understand it and the time available to prepare a response to the Commission.

Community members expressed an interest in a plain language summary with more time to review and understand the information in the ROR. It was clear to CNSC Staff that a new approach was needed to address these concerns and to provide the information contained in the 2018 ROR in a more user-friendly approach.

In 2019, as a result of what we heard in

the interventions before the Commission, CNSC Staff took an initiative to meet with Indigenous groups and communities. The meetings were planned to take place well in advance of the usual public consultation period to provide information and seek opportunities for improvement in the Regulatory Oversight Report.

Two meetings were held in Prince Albert, Saskatchewan in early September, with over 40 people in attendance each day. One was hosted by the province and involved a meeting of the Northern Saskatchewan Environmental Quality Committee, and the second day was with the Indigenous community leaders supported by funding from the Participant Funding Program.

CNSC Staff led the presentations for both days, providing background information on the mandate and operation of the CNSC, information on the development of the ROR and a summary of the results presented in a different format to facilitate better understanding.

In addition, project officers for each site gave an overview of that site, helping attendees understand to whom they could go for additional information.

Specific information on the environmental review process, particularly for new projects, was also

provided to those assembled each day.

Feedback from the Prince Albert meeting was used to develop the plain language overview included in this year's report. The draft version of this ROR was made available on the CNSC web site for a 30-day public consultation period on October 11th, 2019.

First Nation and Métis communities with interest in Canada's uranium mines and mills were provided a copy of this Regulatory Oversight Report at that time.

CNSC Staff remain 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 facilities and activities, including uranium mines and mills, upon request to provide updates and to build these important relationships.

CNSC document RegDoc 3.2.1, Public Information and Disclosure, sets out the CNSC requirements for effective communication with all members of the public. The primary goal of the program as it relates to licensed activities is to ensure that information related to the health, safety and security of persons and the environment

and other issues associated with the life cycle of nuclear facilities are effectively communicated to the public.

Licensees have public information programs to engage communities and keep them informed of facility performance and developments. CNSC Staff often participate in these information sessions to listen to the issues being raised by stakeholders and to provide information regarding the role and mandate of the CNSC.

Cameco and Orano provided information on the status of their facilities through a variety of communication activities and products. Some activities implemented by the licensees included facility updates to community committees, northern tour public information sessions, disclosure of on-site events, facility tours, organization of and participation in community events, newsletters and promotion of activities and public engagement using social media.

Licensees also held workshops with Athabasca Collaboration Agreement communities. Communication efforts are primarily in person given the local communities' communication preference.

In addition to the environmental monitoring conducted by the licensee, there are government monitoring programs, the independent environmental

monitoring program conducted by the CNSC and the Eastern Athabasca Regional Monitoring Program overseen by the Province of Saskatchewan.

To complement existing and ongoing compliance verification activities, the CNSC implemented its independent environmental monitoring program to verify the public and environment around CNSC regulatory -- regulated nuclear facilities are not adversely affected by releases to the environment.

This verification is achieved through independent sampling and analysis by the CNSC.

The CNSC implements an independent environmental monitoring program to verify that all persons and environment around the nuclear facilities are protected. IEMPs have been completed at three of the mine -- sorry, three of the five mine and mill sites, with Cigar Lake IEMP tentatively planned for 2020 in anticipation of the expected 2021 licence renewal hearing.

There is no IEMP scheduled for Rabbit Lake at this time due to the current site status of care and maintenance.

Results from previous IEMP sampling campaigns are available on the CNSC's IEMP web page.

The map on the right shows the region

covered by the Eastern Athabasca Regional Monitoring Program. The Eastern Athabasca Regional Monitoring Program was initially established in 2011 building on the previous cumulative effects monitoring program.

In partnership with the Government of Saskatchewan, industry and Saskatchewan communities, the program monitors the safety of traditionally-harvested country foods from representative communities located in northern Saskatchewan. The intent of the program is to evaluate the quality of country foods to assess any potential impacts resulting from industrial activities and to provide confidence to community members that traditional country foods remain safe to eat today and for future generations.

Community members may also submit samples for analysis as the EARMP program maintains capacity to receive samples of foods of particular interest. The program is designed to report on cumulative effects downstream of uranium mining and milling operations, and gives a good representation and assurance that country foods are safe to eat, the water is safe to drink, and the environment is protected.

The CNSC is a funding partner for the EARMP, and funding has been secured through the 2022

sampling period.

CNSC Staff participates in the development of the EARMP, including reviews of the sampling data and providing input into the conclusions of the report.

A primary objective of the 2017-2018 EARMP was to address gaps from previous monitoring years. As stated, in the Eastern Athabasca Regional Monitoring Program 2017-2018 Report published in 2018, the results of the risk assessment, which also considered food bought in the supermarket, indicate that the consumption of local surface water and country foods does not present health risks to Athabasca Basin residents and is safe for consumption.

Mr. William Stewart will make the next part of the presentation which will provide information on each specific uranium mine and mill.

MR. STEWART: Good afternoon, President Velshi and Commission Members. My name is William Stewart, and I am a Senior Project Officer in the Uranium Mines and Mills Division.

There are currently five operating uranium mine and mill facilities in Canada, all located in the Athabasca Basin in northern Saskatchewan. Cameco operates the Cigar Lake mine, McArthur River mine, Rabbit Lake mine

and mill and Key Lake mill. Orano operates the McClean Lake mill.

Three of these facilities, Rabbit Lake, McArthur River and Key Lake, were in a state of indefinite production suspension through most of 2018.

As shown in this chart, total compliance verification effort for uranium mines and mills remained relatively the same in 2018 as 2017. Compliance verification effort was 960 person-days in 2017 and 959 person-days in 2018.

Person-days for licensing decreased in 2018, mostly due to extra effort on licensing for McClean Lake that had been required in 2017, 365 person-days, with only 52 person-days required in 2018.

While the Key Lake, McArthur River and Rabbit Lake sites suspended their operations during 2018, the amount of regulatory effort changed little, as the number of licensee staff remained at each of these sites and activities such as environmental protection, particularly water treatment, are required to be continued.

CNSC Staff expend considerable regulatory effort to follow up at each site, ensuring that the transition to this phase is carefully considered and that training and on-site support staff remain in place.

Following a review by CNSC of the compliance verification effort planned for each site, the total number of inspections carried out in 2018 decreased to 26 from the previous year's value of 30, mainly due to McArthur River, Key Lake and Rabbit Lake moving to a state of care and maintenance.

A number of non-compliances identified increased from 26 to 31, but this continues to be within the normal range for these facilities. All the non-compliances raised as a result of inspection activities in 2018 were considered to be low risk and have been adequately addressed by the licensee. With an evaluation by CNSC Staff to ensure that corrective actions implemented by the licensee were effective and acceptable, all non-compliances were closed.

The picture on the right of this slide shows an aerial view of the Cigar Lake mine. Cameco's Cigar Lake operation is the world's second-largest known high grade uranium deposit. Uranium ore mined at the Cigar Lake operation is ground into slurry and loaded into containers and shipped by truck to the McClean Lake mill.

CNSC Staff spent 259 person-days on licensing and compliance verification activities, including six inspections that resulted in nine identified

non-compliances.

For Cigar Lake, there were no licensing or Licence Condition Handbook changes in 2018. Cameco's Cigar Lake licence is valid from July 1st, 2013 to June 30th, 2021.

Cigar Lake continued development of underground workings and continues programs for ongoing developments to improve mine water treatment. Cigar Lake continues to haul low-level waste to the Rabbit Lake operation.

The picture on the right of this slide shows the surface facilities at Cameco's McArthur River mine, the world's largest high-grade uranium mine.

CNSC Staff spent 179 person-days on compliance verification and licensing activities. CNSC Staff conducted five inspections which resulted in five non-compliances being identified.

There were no licensing or Licence Condition Handbook changes in 2018 at McArthur River. The CNSC licence issued to the McArthur River site is valid until October 31st, 2023.

In November 2017, Cameco notified CNSC Staff that McArthur River would undergo a temporary suspension of operations. In 2018, the temporary

suspension was updated to be an indeterminate suspension.

Care and maintenance activities are in place to ensure the safety of workers, the public and the environment.

CNSC Staff will continue to conduct verification activities and to verify continued safe operations and protection of the environment. CNSC Staff use a risk-informed approach while conducting compliance verification activities during current suspension of production.

The picture on the right shows an aerial view of the Rabbit Lake facility. Cameco's Rabbit Lake facility has been in operation since 1974 and has both a mine and a mill.

CNSC Staff spent 238 person-days on compliance verification and licensing activities. CNSC Staff conducted four inspections which resulted in nine non-compliances being identified.

There were no licensing or Licence Condition Handbook changes in 2018 at Rabbit Lake. The CNSC's licence for Rabbit Lake site is valid until October 31st, 2023.

Mining and milling operations were suspended in 2016 and associated facilities were placed

into a state of care and maintenance. The Rabbit Lake in-pit tailings management facility continues to provide storage of solids produced by the mill water treatment system and progressive reclamation activities will continue throughout the care and maintenance period.

Key Lake mill is located approximately 570 kilometres north of Saskatoon, Saskatchewan and is owned and operated by the Cameco corporation.

CNSC Staff spent 147 person-days on compliance verification licensing. CNSC Staff conducted five inspections which identified five items of non-compliance.

In October 2013, the Commission issued a 10-year licence following a public hearing in La Ronge. The Key Lake operation licence expires on October 31st, 2023.

There were no licensing or Licence Condition Handbook changes at Key Lake in 2018. And again, in November 2017 Cameco notified CNSC Staff that Key Lake would undergo a temporary suspension of operations.

In 2018, the temporary suspension was updated to be an indeterminate suspension. Care and maintenance activities are in place to ensure the safety of workers, the public and the environment.

The picture on the right shows the McClean Lake mill operated by Orano Canada. In 2018, CNSC Staff spent 297 person-days on compliance verification and licensing activities at McClean Lake. CNSC Staff conducted six inspections which resulted in three items of non-compliance being noted.

In July 2017, the Commission issued a 10-year licence following a public hearing in La Range, Saskatchewan. The CNSC licence for McClean Lake operation expires on July 1st, 2027.

In July 2018, the McClean Lake licence was amended to allow for the name change of the licensee from Areva Resources Canada Inc. to Orano Canada Inc. There were no changes to the Licence Condition handbook in 2018.

McClean Lake continued to process uranium ore slurry received from Cameco's Cigar Lake mine. Orano completed the JEB tailings management facility optimization stage 2 in the summer of 2018.

The presentation will now turn to review of the performance of uranium mines and mills in general.

CNSC Staff evaluate licensees' performance using safety and control areas. The 14 safety and control areas are common to all CNSC licensees, but the relative importance of each safety and control area is related to

the type of operation being regulated.

CNSC Staff assess licensee performance on all 14 safety and control areas. Ratings are derived from the results of regulatory oversight activities.

Safety and control area performance is rated using set criteria such as key performance indicators, compliance verification with licence conditions and events reported to the CNSC, including licensee's action in response to events and the nature of the events themselves.

CNSC Staff assign ratings to the safety and control area based on their professional judgment, expertise and information collected.

CNSC staff consider a multitude of inputs and assign a rating that best represents licensee performance in a holistic manner. The rating methodology was presented as part of the 2017 Regulatory Oversight Report.

The 2018 performance ratings for each of the 14 safety and control areas determined by CNSC Staff based on regulatory oversight activities are shown on this slide.

CNSC Staff's review of key performance indicators resulted in a rating of satisfactory for all

operating mines and mills with the exception of the McClean Lake radiation protection program, which was rated fully satisfactory.

In 2018, the radiation protection performance rating for McClean Lake was fully satisfactory based on the results of compliance verification inspections, desktop reviews and the determination that the radiological hazard control, worker dose control and ALARA programs were highly effective.

The following slides focus on the three safety and control areas of radiation protection, environmental protection and conventional health and safety.

The primary sources of radiation exposure at uranium mines and mills comes from gamma radiation, long-lived radioactive dust, radon progeny and radon gas. As part of routine and focused compliance verification activities, CNSC Staff verified that licensees have effective radiation programs and practices to monitor and control radiological hazards.

The five operating facilities all have the same action level for nuclear energy workers of 1 mSv per week and 5 mSv per quarter in a given year.

CNSC Staff concluded radiation doses were

kept as low as reasonably achievable and workers are being protected.

This slide clarifies the concept behind some of the graphs used in this report to explain the relationship between action levels and regulatory limits of a monitored parameter. The green region with the dots represents the normal range of operation for a parameter. As with most measured parameters, there is some expected fluctuation in the value during normal operation.

The regulatory limit is prescribed in regulation and is shown as the red line on the graph.

Action levels are typically set much lower than the regulatory limit and serve to indicate when the program and mechanisms to control that parameter may be compromised. The action level shown on this slide is the blue line and may be general or licensee specific.

It is important to recognize that the exceedance of an action level on its own does not imply a potential health and safety risk to the people or to the environment, but may indicate that the licensee's program for controlling that parameter may not be effective. Setting action levels in this way allows the licensee to respond and correct the situation well before there's a possibility to exceed the regulatory limit.

An action level exceedance requires the licensee to notify the CNSC, perform an immediate investigation and, where needed, carry out subsequent corrective actions and take measures to prevent recurrence.

The licensee may also have their own administrative levels below an action level within the green range. Often called an administrative level, it is not shown on the slide but represents a very early indication for the licensee to evaluate their operations.

There are no regulatory requirements for administrative levels, but they represent an industry good practice. Administrative levels are used by the licensee to ensure optimal working conditions.

In 2018, there were two events that resulted in employees exceeding either weekly or quarterly action levels at the Cigar Lake operation. During a project that took place over several days in June and July 2018, workers were tasked with replacing some underground medium-pressure pumps. Preparation work for this task included pre-cleaning of the work area by washing it down with water hoses.

Clay material in the work area was not identified prior to the work starting and became airborne or transferred to the workers' coveralls during the

maintenance activity. As a result four workers received long-lived radioactive dust exposures between 1.17 mSv and 1.67 mSv, exceeding the weekly action level of 1.0 mSv.

One of those workers also received a quarterly dose of 5.17 mSv which is above the quarterly action level of 5.0 mSv. As described earlier in the presentation, an action level is a parameter that, if exceeded, may indicate a potential loss of control of a program.

In November 2018 one worker exceeded both a weekly action level and quarterly action level at Cigar Lake. Workers were replacing a flush tube on the underground jet boring system. Part of the maintenance activity requires the workers to close the ball valve to isolate the flush tube from the ore cavity. This valve was not closed during the work.

In addition, one worker had to position themselves downwind of the opening of the flush tube and was exposed to radon gas and radon progeny escaping the pipe. That worker exceeded both the weekly and quarterly action level.

As a result of these two events, CNSC Staff conducted a focused inspection of specific components of the Cigar Lake radiation protection program and the

management system program at Cigar Lake.

Although the inspections identified non-compliances, CNSC Staff determined that the programs continued to be effective and were meeting regulatory requirements. CNSC Staff verified the implementation of corrective actions identified in the investigation report or confirmed that corrective measures are scheduled to be completed and are planned.

CNSC Staff verified that approved programs are followed by Cameco and that, as a result of the experience from the incidents in 2018, programs were approved, if necessary, and remain robust in protecting workers.

There were no regulatory exceedences as a result of these two events. The RP and management system programs at Cigar Lake continue to be rated as satisfactory.

This graph shows the maximum and average individual effective dose measured for nuclear energy workers at each of the five uranium mine and mill facilities in 2018. The annual maximum individual effective dose for nuclear energy workers at the five facilities was 7.16 mSv, well below the annual regulatory limit of 50 mSv.

This slide shows the five-year trend of collective dose for nuclear energy workers at each of the operating uranium mine and mill facilities from 2014 to 2018.

Collective dose is a well-established metric and is useful for showing the dose impacts associated with significant changes in operational status, such as with Rabbit Lake, McArthur River, and Key Lake, as they transition to a care and maintenance regime. Beginning at Rabbit Lake in 2016 and McArthur and Key Lake in 2017.

Collective dose also provides a measure of ALARA performance for licensees during regular production periods as exhibited by decreasing trends at Key Lake, McArthur River and Cigar Lake. Additional information explaining collective dose trends for the licensee is provided in the full regulatory oversight report.

All metal mines and mills in Canada are subject to the Metal and Diamond Mining Effluent Regulations of the *Federal Fisheries Act*. CNSC Staff verified that licensees have effective environmental monitoring programs to monitor and control the protection of the environment.

Action levels are established for

contaminants in effluent to ensure early detection of potential problems in water treatment systems. One action level exceedance was identified for radium in the McArthur River effluent, this will be discussed on the next slide, and one regulatory limit exceedance was also identified for pH in the Key Lake reverse osmosis plant effluent, this will be discussed in the next slides as well.

CNSC Staff compliance verification activities confirm that the licensees' environmental protection programs were protective of the environment.

On March 9th, 2018 Cameco reported three administrative-level exceedences for radium of 0.30 Bq/L. On March 10th, 2018 Cameco notified CNSC Staff of an action level which occurs when the average concentration of radium in 10 ponds exceeds the administrative level.

CNSC Staff verified that the McArthur River operation completed a root-cause investigation and implemented corrective actions. There was no impacts on the environment or the health and safety of persons as a result of this event. The concentration of radium-226 in the water was less than the discharge limit for grab, composite and monthly average samples.

There are two water treatment plants at the Key Lake operation. A water treatment plant is located

within the mill and a reverse osmosis plant, or RO plant for short. The RO treats groundwater from the de-watering wells operating as part of the Gaertner Pit and Deilmann Pit hydraulic containment system.

There were no exceedences of environmental action levels during the 2018 review period, however there was one event where approximately 10 cubic metres of high pH, 10.16, effluent was released from the reverse osmosis plant on October 12th, 2018.

Although only a small volume of discharge was released, the pH was above the upper pH limit specified in the metal diamond mining effluent regulations which is a pH of 9.5.

As comparison to the volume of elevated pH discharge during the event, the average daily discharge of treated effluent to the environment in the month of October 2018 is approximately 14,860 cubic metres.

An investigation was completed by Cameco and corrective actions developed to improve pH control. A review of the status of follow-up actions, as proposed by Cameco, was conducted by CNSC Staff during an inspection and was found to be acceptable. There was no environmental impact as a result of this event.

In December 2018 Cameco reported that a

groundwater monitoring well within the mill area showed an increase in uranium concentrations. Follow-up samples were collected and confirmed the increasing trend in uranium in the well, but not in other surrounding wells, which indicated that the contamination was limited in extent.

Both the licensee, Cameco, and CNSC Staff posted information on this event on their websites immediately after it was reported.

This event was reported to the Commission in CMD 19-M13, which was presented at a May 15th, 2019 meeting. In response to the elevated uranium in groundwater well MT-802, which is within the licensed site premises, Cameco initiated an investigation.

This included drilling additional groundwater wells, borehole installation, soil testing, and water quality testing. The field investigation was completed in the summer of 2019, and in accordance with Saskatchewan and Canadian Standards Association standards a site assessment report is being prepared and will be submitted to the CNSC in early 2020.

However, based on the results of the investigation to date, the contamination remains limited to the area of the well under the SX building. At this time, CNSC Staff concurs with Cameco that the groundwater in this

area is moving very slowly and there is no impact to the surrounding environment, nor is there a likelihood that the material will move offsite in the near future before any necessary remedial actions can be taken.

Licensees are required to report to the CNSC and other regulatory authorities any unauthorized release of hazardous substances or nuclear materials. Reportable spills in 2018 at each uranium mine and mill facilities are displayed on this slide. For each of these spills the licensee investigated the cause and implemented corrective actions to remediate and prevent a reoccurrence.

In 2018 there were 20 spills reported, which is above the five-year average of 17 spills per year for the five operating mines, but within historic ranges. CNSC Staff rated all spills in 2018 at the mine and mill facilities as low significance, and all spills were mitigated or being investigated.

There is no impact to the environment as a result of these releases. CNSC Staff found that the licensees' reporting and responses to environmental spills during 2018 was acceptable.

This slide shows the annual average of selenium concentrations in treated effluent at each operating uranium mine and mill facility from 2014 to 2018.

The 2014 to 2018 selenium concentrations in effluent at operating uranium mines and mills were below the provincial licence effluent discharge limit. The maximum level discharge remained almost 30 times below the provincial limit of 0.6 mg/L.

This slide shows the annual average molybdenum concentration in treated effluent at each of the operating mine and mill facilities from 2014 to 2018. The 2014 to 2018 molybdenum concentrations in effluent at operating uranium mines and mills were less than half of the discharge action level for Key Lake, which is the most stringent action level for all the operating uranium mines and mills.

This slide shows the annual average uranium concentration in treated effluent at each of the operating uranium mine and mill facilities from 2014 to 2018. The 2014 to 2018 uranium concentration in effluent operating uranium mines and mills were below the province licence effluent discharge limit, and have been below the CNSC objective since 2016.

In 2018 the average concentration of uranium in water for each site was more than three times below the more stringent CNSC interim objective of 0.1 mg/L.

This slide shows the average uranium concentrations in treated effluent at each of the operating uranium mine and mill facilities from 2014 to 2018. The 2014 to 2018 radium concentrations in effluent at operating uranium mines and mills were below the provincial licence effluent discharge limit.

In 2018 the concentration of radium in treated effluent was less than one-fifth of the provincial discharge limit.

This table shows the 2018 data for radionuclides concentrations measured in ambient air, uranium mines and mills. High-volume air samplers are used to collect and measure total suspended particulates in air and the particulate samples are also analyzed for metal and radionuclide concentrations. The concentrations of lead-210, radium-226, thorium-230, and uranium were all below the referenced air quality levels.

CNSC Staff confirmed all uranium mine and mill facilities demonstrated strong performance mitigating atmospheric effects of their operations on the environment and conducted regular air quality monitoring. CNSC Staff concluded that the environment was protected.

This chart shows the five-year trend for radon in ambient air. Radon measurements on site are

shown, radon in ambient air is within the upper bound of regional background for Northern Saskatchewan. Also shown on the graph is the radon in ambient air concentration that represent an incremental dose of 1 mSv per year above background.

Lost-time injury statistics are a key measure of licensee performance for conventional health and safety. A lost-time injury is a workplace incident that results in a worker being unable to return to work for a period of time.

CNSC Staff also considered the injury frequency and severity rate. CNSC Staff in Saskatchewan's Ministry of Labour Relations and Workplace Safety monitor and review each reportable injury to ensure that the cause is identified and satisfactory corrective actions are taken.

The severity rate of 23.2 shown for McArthur River is related to incidents that occurred in previous years, but the time was not lost until 2018. As previously requested by the Commission, CNSC Staff included the total recordable incident frequency this year. This statistic measures all injuries requiring medical attention, including lost-time injuries.

CNSC Staff compared licensees' performance

with respect to relevant national and international benchmarks, and the uranium mine and milling sector in Canada exhibits an injury frequency rate which is similar to or better than national or international benchmarks.

CNSC Staff confirmed that the operating mine and mill facilities implemented effective management of conventional health and safety in their activities.

I will now turn the presentation back over to Mr. Fundarek.

MR. FUNDAREK: For the record, my name is Peter Fundarek, and I will now discuss the information arising from the interventions received during the public review of this regulatory oversight report.

The CNSC's Participant Funding Program supports the participation of individuals, not-for-profit organizations, and Indigenous groups in the CNSC's regulatory processes, including RORs.

Additionally, the program helps interested parties contribute value-added information to the Commission, which is subsequently taken into consideration during the decision-making process.

The CNSC awarded approximately \$63,700 through the CNSC's Participant Funding Program for the reviewing of the 2018 ROR on uranium mines and mills. The

funds were awarded to organizations, Indigenous groups, and individuals which are noted on the slide.

A draft version of the 2018 Uranium Mines Mills ROR was made available on the CNSC website on October 11th for a period of 30 days with comments required by November 12th, 2019.

As noted earlier in this presentation, CNSC Staff also conducted two days of meetings on September 4th and 5th where the information from the 2018 ROR was presented to Indigenous groups and communities of Northern Saskatchewan in an effort to provide information as early as possible to facilitate the review process.

In addition to the written submissions received from the four participant funding recipients, CNSC Staff received interventions from five other parties also shown on this slide.

The review by CNSC Staff of the interventions received in response to the draft UMM ROR noted several positive comments made by Indigenous groups and their representatives. Many of the submissions noted an increase in engagement and communication over the past year, and the resulting improved relations.

Over the past year CNSC Staff have worked diligently to address the comments made at the presentation

of the 2017 UMM ROR last year at this time and CNSC Staff are reassured that these efforts have helped.

CNSC Staff continue to use the feedback received from this presentation as well as all of our outreach efforts to look for opportunities for improvement so that we can continue to build a meaningful relationship with all impacted stakeholders in the areas surrounding the uranium mines and mills in Saskatchewan.

CNSC Staff will continue to engage with all interested persons, listening to their concerns, and providing objective scientific information regarding areas of interest.

There were several key themes related to the 2018 ROR that were identified as areas for improvement for the CNSC and the document. Indigenous groups identified the need for further enhanced communications, including face-to-face dialogue with local communities where possible, direct notification to communities of risk-significant events and more reader-friendly and comprehensible information. In addition, groups requested more time to review the documentation included in the ROR given the wealth of data that is presented in that document.

CNSC Staff have already taken steps to

address some of these comments by the use of face-to-face meetings, where possible, and using the information in the 2018 ROR and providing it as early as possible to these interested groups.

CNSC Staff will continue to do our outreach program to provide additional information that is being sought by these communities and their representatives.

Having completed a fulsome review of the information available in the 2018 Regulatory Oversight Report for Uranium Mines and Mills, I will now turn to CNSC Staff conclusions on licensee performance.

CNSC Staff confirm all facilities included in this report had satisfactory performance: radiation protection measures that were effective in keeping doses as low as reasonably achievable; environmental protection programs that were effective at protecting the environment; and, effective conventional health and safety programs to protect the workers.

CNSC Staff conclude that each regulated facility operated safely, met licence conditions, and regulatory requirements with respect to the health and safety of persons and the protection of the environment and Canada's international obligations.

CNSC Staff continue to use a risk-informed approach to ensure regulatory oversight, enhanced cooperation with provincial agencies and meet commitments for meaningful outreach and engagement with Indigenous groups and the public.

CNSC Staff will continue regulating the nuclear industry in a manner that maintains public trust and confidence.

This concludes CNSC Staff's presentation. CNSC Staff here, and in Saskatoon, remain available to address any questions. Thank you.

THE PRESIDENT: Thank you very much for the presentation. I'll now ask the licensees if they wish to make any comments on what was presented today.

Cameco Corporation, would you like to make a statement?

MR. MOONEY: Yes. Thank you, President Velshi and Members of the Commission. For the record, my name is Liam Mooney, I'm the Vice-President of Safety, Health, Environment & Quality and Regulatory Relations with Cameco Corporation.

Joining me today is Kevin Nagy, our Director of Compliance and Licensing for our Saskatchewan Mining and Milling Operations. We're also joined by

Kristin Cuddington, our Manager of Community and Indigenous Engagement.

We are joining you today as part of your review of CNSC Staff's 2018 Regulatory Oversight Report for Uranium Mines and Mills. I want to start by emphasizing that Cameco's highest priorities are the safety and health of our workers, and the public, along with the protection of the environment.

Our consistent performance in these areas is demonstrated in the report that CNSC Staff is presenting here today. We sustained our ratings in all safety and control areas while responding appropriately to events at our operations.

We are proud of our record on conventional radiation safety as well as environmental performance, which we feel is a product of our strong management systems and capable dedicated staff.

Cameco continues to manage operations amidst a challenging global uranium market. 2018 was our first year with three of our Saskatchewan operations in a state of safe care and maintenance. Though this transition has negatively impacted our employees and contractors, we did our best to maintain the percentage of northerners working at our operations. This means that about 50 per

cent of the total workforce at our operations are from Northern Saskatchewan.

Despite these challenges, we are committed to informing our target audiences in Northern Saskatchewan in accordance with our approved public information programs and our own policies and procedures.

Since Cameco was formed more than 30 years ago, we have engaged the people of Northern Saskatchewan in an effort to listen to and address their concerns.

Our engagement activities are intended to bring forward questions and concerns for Cameco to respond to in a meaningful way. We do this formally through Cameco and government-sponsored committees and meetings with local communities or their elected representatives.

Cameco signed collaboration agreements with our northern partners to formalize the existing framework for engagement. We have established environmental and engagement subcommittees under our collaboration agreements with Yáthi Néné, English River and Pinehouse.

The signatories to these agreements include four First Nations, five municipalities and one Métis local. This builds on our longstanding relationship with the Athabasca communities that was formalized with one

of the first impact-benefit agreements in Canada.

Community and industry representatives meet regularly to discuss operational and environment-related matters of importance to their respective communities. The Yáthi Néné Land and Resource Office, who you'll hear from today, was established as a result of one of these collaboration agreements and provides technical expertise to the relevant subcommittee.

As well, Cameco's community liaison positions that are located in our collaboration agreement communities provide additional information in relation to employment opportunities. They also deliver our northern strategies; namely workforce development, community engagement, and environmental stewardship initiatives.

We also continue to work closely with the Northern Saskatchewan Environmental Quality Committee which was established in the 1990s and has a representative in the Saskatoon office of the CNSC today.

We engage informally through various activities such as site tours, community visits and general information sharing.

Additionally, we work to ensure that local communities benefit from the value that the company places on economic development and social responsibility. One of

the ways we do this is through our collaboration agreements that formalize the existing framework, full engagement and environmental stewardship, workforce development, business development, and community investment efforts.

In addition, community-based environmental monitoring programs, such as the Eastern Athabasca Regional Monitoring Program and the Community-Based Environmental Monitoring Program, work alongside local community members and confirm that country foods continue to be safe to eat and the water safe to drink.

Since 1990 we have commissioned province-wide public opinion surveys annually so we can gain a better understanding of public perceptions and opinions related to uranium mining in Northern Saskatchewan. The surveys measure trends and public support and continue to identify issues of interest.

In 2018 survey results showed high levels of support for the continuation of uranium mining in Saskatchewan with 80 per cent support province-wide and 82 per cent of respondents from Northern Saskatchewan supporting our industry. This high-level support is consistent with the long-term trend.

In closing, we continue to perform well while engaging and communicating with our target audience.

This performance, along with our leading engagement practices contribute in no small measure to the strong support for our operations that we enjoy in Saskatchewan.

We are available to respond to any questions that you may have for us.

THE PRESIDENT: Thank you very much for that. I'll now ask Orano, if you'd like to make a statement please?

MS SEARCY: Hi, yes. Tina Searcy, for the record. Madam Chair, Members of the Commission, thank you and good morning. My name is Tina Searcy, I'm the Regulatory Relations Manager for Orano Canada and I'm joined here today in Saskatoon by my colleagues: Glenn LaFleur, Manager of Northern Affairs; and, Vincent Laniece, Vice-President of Safety, Environment & Engineering.

Orano operates the McClean Lake operation and we are joint venture partners on the McArthur River, Key Lake and Cigar Lake operations. We also operate the Cluff Lake Decommissioning Project which was subject to the regulatory oversight report last December, and a licence renewal hearing before the Commission earlier this year.

The regulatory oversight report speaks to the McClean Lake operations performance in 2018. In 2018 the mill continued to receive high-grade ore slurry from

the Cigar Lake Mine and produce 6,930 tons of uranium packaged yellow cake, while achieving good safety and environmental performance.

We produced ore slurry at grades averaging 16.3 per cent while achieving worker radiation doses near the public dose limit.

We continue to have several occasions to meet with our local stakeholders and update them on our performance and our activities through the established forums of the Athabasca Joint Environment and Engagement Subcommittee and the Environmental Quality Committee.

We look forward to continuing our relationships with stakeholders, including those that provided interventions for this proceeding. We have reviewed the CNSC Staff Regulatory Oversight Report and find it accurately summarizes performance at the McClean Lake operation.

As is seen in the report, uranium mines continue to be good performers in the mining industry in terms of protection of the health and safety of workers and the public and of the environment.

We are here for the duration of the proceeding today if you have any questions. Thank you.

THE PRESIDENT: Thank you very much.

We'll now take a 15-minute break, resume at 10:55 and we'll get to the interventions.

Thank you.

--- Upon recessing at 10:39 a.m. /

Suspension à 10 h 39

--- Upon resuming at 10:54 /

Reprise à 10 h 54

THE PRESIDENT: Welcome back.

Before we get into the interventions just like yesterday, I want to note that some intervenors have raised concerns for this Regulatory Oversight Report, and at other occasions, regarding procedural considerations such as access to documentation, timelines, the inability to present orally and on the content of RORs.

I want to acknowledge that we have duly taken note of these concerns and that the CNSC staff are looking not only at RORs but also at opportunities for improving participation at Commission proceedings, especially with regards to content, timeliness, frequency and means of participation.

So early in 2020, CNSC staff will start consultation with Commission Members, licensees, civil

society organizations, Indigenous peoples and the public. We are hoping that with the recommendations resulting from that review next year's RORs as well as other Commission proceedings will address these concerns.

So we won't spend a whole lot of time going through those concerns today, but again I want to reassure you that they have been noted and will be considered in the new year.

So we will now move to our interventions and we will start with the presentation from the Prince Albert Grand Council, as outlined in CMD 19-M36.2.

Dr. Michell and Dr. Abdulla, I gather you are joining us via Webex, so over to you.

--- Pause

THE PRESIDENT: Prince Albert Grand Council, are you here with us?

--- Pause

THE PRESIDENT: Well, maybe while they are setting up we can move to our next intervenor and that is a presentation from the Ya'thi Néné Land and Resource Office, as outlined in CMDs 19-M36.6 and 19-M36.6A.

I understand that Mr. Schmidt, you will be beginning the presentation. Over to you, please.

CMD 19-M36.6/19-M36.6A

Oral presentation by the

Ya'thi Néné Land and Resource Office

MR. SCHMIDT: For the record, Garrett Schmidt.

Good morning, President Velshi and Commission Members. My name is Garrett Schmidt, I am the Executive Director for Ya'thi Néné Land and Resource Office.

Here with me today are:

- Chief Louie Mercredi from Fond du Lac First Nation, to my right;

- behind me and to my right is Councillor Glenda Mercredi from Hatchet Lake First Nation;

- directly behind me is Elder Mervin Adam from Fond du Lac First Nation; and

- behind me and to my left is Councillor Ambrose Boneleye from Black Lake First Nation.

Ya'thi Néné is owned by and represents the seven Athabasca Basin communities, three of which are here with me today, the three First Nations, as well as the four municipalities of Camsell Portage, Uranium City, Stony Rapids and Wollaston Post.

I will provide an overview of our three recommendations based on our review of the ROR and then turn it over to community leaders for further comment.

Ya'thi Néné Land and Resource Office received the Regulatory Oversight Report for 2018 from the CNSC and we conducted an engagement session with community leadership from all seven communities. We were also able to participate in the PA Information Session held in early September and we also participate on the Athabasca Joint Engagement and Environmental Subcommittee.

The following review of the document and the consultation with the leadership provided the following three recommendations for the Commission.

Number 1: Provide more than a 30-day period for the submission review to allow for enhanced engagement with community members.

As you are all aware, the Athabasca Basin is a very large geographical area with lots of logistical challenges to travel between communities, so more time would allow for more thorough engagement to occur.

If you recall from our previous hearings this year, both for Cluff Lake as well as Beaverlodge, this is also a consistent recommendation from us.

Recommendation number 2: In accordance

with REGDOC-3.2.1 and the encouragement of updating communication procedures, Ya'thi Néné strongly recommends that the licensed facilities implement a new reporting procedure for contacting the seven Athabasca Basin leaders as well as the Ya'thi Néné Land and Resource Office Executive Director to any incident classified as medium or high through email upon occurrence.

Currently, notices are posted on websites, but we feel that in accordance with REGDOC-3.2.1, that encourages licensees and licence applicants to adopt more effective and appropriate means of communication, we feel that more direct communication with all seven leaders would be more appropriate and support that REGDOC.

And finally, recommendation number 3 is to add community comprehension as the 15th safety and control area to ensure that communities impacted through the mining industry are updated and informed on the areas of environmental protection concerning the use of the land and their health and safety.

Currently, there are the 14 safety and control areas and leadership feels that communities would benefit from that additional 15th SCA. This really stems from some of the concern from community members who don't regularly understand the issues that are brought to their

attention based on some of the incidents that might happen on sites or some of the long-term impacts from the operations.

So increased communication from Cameco, Orano, the CNSC, Government of Saskatchewan, it is all recommended. This could look like further more direct and frequent meetings in communities, more frequent sampling directly from community members or better promotion of some of the existing programs that exist like the Eastern Regional Athabasca Monitoring Program or the Community-based Environmental Monitoring Program.

So key performance indicators or specific areas for this new safety and control area can be further evaluated and discussed in the future.

So just in closing, Ya'thi Néné appreciates the opportunity to participate in these hearings. Communication between the CNSC, Cameco, Orano and Ya'thi Néné has always been prompt and professional and we look forward to assisting with implementation of these recommendations and to continue the dialogue to improve the regulatory documents that licensees and licensed facilities abide by.

And with that, I would like to turn it over to the leaders to provide further thoughts and

comments and we will begin with Chief Louie Mercredi.

CHIEF MERCREDI: For the record, my name is Louie Mercredi. I am the Chief of Fond du Lac First Nation. I represent the surrounding communities as well, the affected communities in the Athabasca Basin.

There's a lot of issues that we face with the industry that impact our way of life. We cannot even harvest or gather things that we had survived with for tens of thousands of years within our traditional areas due to the environmental impacts that we see. Even in our fisheries now, the water, the elements are increasing in our waters and water is life and without water there is no life. We all know that.

And another thing is our way of life is impacted by a lot of industries. Like, you know, from Alberta's side too we are also impacted by the oil industry from Alberta's side. We live downstream from both major polluters in Northern Saskatchewan. We live downstream from the oil industry and we live downstream from the uranium industry.

So all the accumulations over the course of the past 50-60 years are starting to show up in the water samples now. Our elevation of uranium is increasing. I noticed in the past, going back to historic records, the

water used to be -- there was no concentration of uranium in the water, but now we are seeing elevations of increasing uranium concentration in the water. Also other elements, which are arsenic, radium.

I just heard on the other presentation that was said here, when they have spills at these mine sites there is no residue impact to the environment. I don't get that. I don't understand that. How can they say there is no residue impact to the environment? Naturally there is no radium, arsenic, uranium in the surface of our land. These are brought up by the mining industry and these spills occur and these things are left at the surface.

We live off the land. The land is our grocery store to survive and we have survived this way for tens of thousands of years. We are the first people of Canada and the industry has really, really a lot of impacts. Our way of life is pretty well destroyed.

The first industry that started this nation which we call Canada was the fur industry. Our people are back on the land, but now North American fur auction is not buying fur across Canada. So there is another impact that we face as Dene people of Northern Canada.

The mining industries are shutting down, lack of jobs for our people. People were going back to the land when the industry started slowing down, but now there are no buyers for the fur market. So our way of life is really, really, really difficult as we speak here today.

Health and safety issues, safety to the environment, spills, et cetera, all these impacts. I have stated this before and I will say it again: Once the industry extracts all the minerals that they're after within our traditional territories, they won't be there much longer after they mine out what they're after, but we as people of the North, we will remain there. We are not going anywhere soon. We are there to stay.

So I'm asking the industry to have more monitoring of the environment, of the water quality, and not on an annual basis or even quarterly, we need continuous monitoring of the effluent that is discharged back to our traditional area, traditional waters.

Our health issue. We notice, we gather information from our Elders, our people were the healthiest people around at one time, way before the industry or before the store bought food was brought, introduced to us, the processed foods. Now our cancer rate is increasing in the past 30 years according to the Elders. Every person

that gets to go down and get a checkup, they are diagnosed with cancer. More and more of our people are dying of cancer. Why are we dying of cancer? Why before the industry our people were healthy and after the industry we are dying with cancer?

And our ages, they are getting younger. We have some -- we just buried one of our members just two weeks ago, a 28-year-old mother of four died of cancer. These are the factors that we go through as the small villages of Northern Athabasca. We live in the heart of the industry. What do we get from the industry? Next to nothing, but the damages happen to us. Our way of life is damaged. Our people are dying off with cancer.

Our traditional areas are all impacted from both directions, from Alberta's side and also Saskatchewan. We live downstream from the industries, major industries in Northern Canada.

I am making a recommendation for a third-party study to be done on the health of our people. I am asking CNSC to make a recommendation to have a third-party health study done for our people. Why are we dying off in the last 30 years? Why are the cancer rates still increasing and the age is getting younger? Obviously there's something wrong. We don't have an answer for that,

but we are seeking to find the answers of why it's happening.

Climate change has also taken a big impact on our way of life. We know a lot of emissions are produced by the industries. We rely on caribou for survival. We have survived on caribou for tens of thousands of years, but now, due to climate change, the migrating patterns of our caribou are changing, they are finding new paths, new winter ranges. They seem to be getting further and further away from us. That is due to the industry.

Another industry up in the Territories, the diamond mines, they are located right in the migrating routes where the caribou have travelled for tens of thousands of years. These areas are staked with tens of thousands of stakes. The caribou does not cross those stakes. They kind of migrate to that area and then they turn around and go back up North. So all sorts of industries put a big, big impact on us people of Northern Canada.

With that, thank you.

THE PRESIDENT: Thank you.

MS MERCREDI: For the record, Glenda Mercredi from Hatchet Lake First Nation, also a member of

the Wollaston Post. It is one community but two different areas.

My concern of the way things are relayed, as it was suggested that things be relayed through email directly to the leadership of the community, I wanted to point out that for the hamlet side of the community there is no office and everything is relayed through La Ronge office and there is no -- this person that comes in to relay messages comes in only twice a year. So I would say that they have to find ways where the community has to share the information. Sometimes the information is not being shared directly.

As young people, we drive the roads lots and it's a five-hour drive just on gravel and for us to see an overturned truck brings like great concern, booms set up around areas on the way North. And us young people -- like I said, the majority of our community is young -- we are highly impacted already. Our lake is the biggest up North and the mines are directly in there. Rabbit Lake Mine, even during the decommissioning, the cleaning, after so many testing they release all that water back into our lake. We are directly impacted and for a very young community, our younger generation, as Chief Mercredi mentioned, is coming up with cancer.

I have also questioned like why over years all of a sudden there's about 10-15 cases of new cancer. What is it that's impacting us? Is it just the food itself, processed food, or is it our water?

We have an Elder who does monitoring for the mines once in a while. He keeps us updated like through community visits, but that's not enough. We need to hear directly from the mines whenever there is a spill, whenever they are going to be doing these little release things, especially with, like I mentioned earlier, the overturned vehicles. What is it that was spilled? How was it cleaned up? Is it all cleaned up? Because we don't get updates right away. Sometimes we even find out through the news. So that is one of the ones I highly recommend with Garrett.

Also, going back to one of his -- his number 3 I think, the community comprehension as a 15th safety control where he recommends -- I highly recommend that it is added. It is just a way of us being informed faster and easier, because we have to inform two communities, one that doesn't have an office and one that does have an office.

So there needs to be a person in the community directly relaying information, not just when

Garrett comes to town four times a year. Basically there should be somebody sitting in the community, not the community liaison, because she doesn't do that area, but there should be one liaison even for IBA groups so he/she can relay information right there and then.

Because there are a lot of times where things can be posted on the Internet, but I have three members who do not go on the Internet and they are community leaders. They refuse to be updated through there because they don't have the time to be sitting at a computer and to be working on computers.

And there is always that oral -- they have the oral presentation that is now allowed, you know. I don't like the word "allowed". You know, how can you hear us if you don't hear us? If it's just on notes you are just going to skim through it and just miss our point. So I'm glad that we have this opportunity to speak on behalf of our communities and I just want to say thank you for letting us speak.

THE PRESIDENT: Thank you.

MR. BONELEYE: For the record, Ambrose Boneleye. I'm here representing Northern communities.

We always have -- Elders, they always have a concern. The water, you know, the water releases from

all these existing mines, they have a concern. It goes through our region. Everything leads into Lake Athabasca and once in a while a community has a -- a community can have no drinking water for at least a week and then all of a sudden, now it's okay to drink water again. Elders are very concerned about the water. The water is our life, our way of life.

And what Louie, Chief Mercredi brought up, he spoke for the people up North. The town needs better -- the Elders are saying -- better water treatment. Why can't the mines help the communities have better upgrading water treatment plants? That's the Elders' concern.

And there's two mines -- three mines on care meetings. You know, some Elders, they don't speak English. They're really concerned. How long is it going to sit there like that, the equipment and service can rust out, and they are really concerned about that.

You know, we, as young generations, we know the market is down, but the concern for the people is the water, their land. How is it going to look like after all the mines, all the ore has been mined out? That's the Elders' concern.

Thanks for listening to me. Thanks.

THE PRESIDENT: Thank you.

So before we open it up for questions where I will ask staff and then I will ask the licensees to comment, not on the three recommendations from Mr. Schmidt because we will go through those, but what we have heard from Chief Mercredi, Ms Mercredi and others.

Why don't we start from the health impact and the recommendation for a health study and then we will go through some of the other concerns and recommendations.

MR. FUNDAREK: Peter Fundarek, for the record.

The issue with the health impacts is one of the areas that has been looked at in several studies over the past number of years and I would like to ask Dr. James Irvine in the Saskatoon office if he could speak to the issues that have been raised by Chief Mercredi.

DR. IRVINE: Good morning. This is James Irvine, for the record.

Yes, there has been a number of health studies conducted over the last number of years, fairly comprehensive studies looking at cancer but other causes of ill health as well, that we make publicly available and share with a lot of the communities.

The last cancer study that we had done was up until 2014 and that did not specifically look at the

small area around the Athabasca. It looked at the regions across the North and the North as a whole. Those studies showed that for women in the North their cancer rate was about the same as that of other Saskatchewan women and for men in the North the rate was a little lower in the North than it was in the province as a whole.

However, we have been suggesting over the last two decades that with some of the challenges that there are with tobacco, with processed foods, with a variety of other things that this will change, it will increase, particularly lung cancer, and it has been increasing over the last two decades.

Thanks to the discussion we had in Prince Albert with the Athabasca Chiefs and Mayors, we have initiated a follow-up study, getting more recent data. We had completed one for children's cancer, for children under the age of 14 because of concerns there, and we found that the children's cancer rate in Northern Saskatchewan as a whole is less than half the rate of children's cancer in Canada and it's about half the rate of children's cancer in Saskatchewan. Now, any single cancer in a child is a very difficult situation, but it is somewhat reassuring that the rate is significantly lower than in Canada and in Saskatchewan. And that is similar to the rates that we see

in Yukon, Northwest Territories and Nunavut.

The other thing we have done at the recommendation of the Athabasca Chiefs and the Athabasca municipal Mayors is we have made a partnership with Saskatchewan Cancer Agency for updated information specifically to the North in a way that we can look at the Athabasca Health Authority area at that, plus the communities of Wollaston Post and Hatchet Lake to get some specific information for there. And we are doing it in a way that we can do sample sizes large enough that we can get some ideas of trends over that period, particularly some of the most common types of cancer there.

We see in Saskatchewan and in Canada that things like lung cancer rates are starting to go down in Canada and in Saskatchewan and that's because of the marked decrease in smoking that has occurred over the years. Smoking rates are now about 18 percent or even lower in Canada, whereas a First Nations study done through the Assembly of First Nations showed that the smoking rate in some of the northern First Nations in Saskatchewan is about 78 percent. So we may well see an increase in lung cancer during that time, but we will get specific information that is available.

And we will also try to compare that with

some of the most common issues as it relates to diagnosis of cancers, what are some of the most common causes and what are the implications for the North, what are screening rates for things like colorectal cancer, and we will do that in conjunction with the Athabasca Health Authority and the Northern Intertribal Health Authority, along with Saskatchewan Cancer Agency. So we will be able to provide more specific information to the Athabasca Chiefs and Mayors on that over the next few months.

I would be happy to answer any questions.

THE PRESIDENT: Thank you, Dr. Irvine.

Chief Mercredi, are you aware of these follow-up studies that are being done?

CHIEF MERCREDI: For the record, Chief Mercredi.

No, I am not aware of any studies being done. I haven't heard or didn't know anything about it. So I am still asking for my recommendation to have a third-party study done on our people in the North without Dr. Irvine. I am asking for a third-party health study done for our people, for our young generations to survive. Thank you.

THE PRESIDENT: Dr. Irvine, so what is the level of engagement with the Chiefs up North in this study?

DR. IRVINE: At the present time it followed a meeting we had with them in September where they had made the recommendation that they wanted an update of the cancer studies and some of the information that we shared with them, because at that time we had information up to 2014. And then following the hearing, a CNSC hearing in early October, they reinforced that recommendation. So we have partnered with the Athabasca Health Authority, the Northern Intertribal Health Authority and Saskatchewan Cancer Agency since that time and we have just started to receive the data from the Cancer Agency presently. So it's still in the early stages of that development. We will be sharing some of that information, where we are at and what some of our plans are with the Athabasca Health Authority Executive Team next week.

THE PRESIDENT: Thank you.

Staff, did you have anything else to add to that?

MR. FUNDAREK: Peter Fundarek, for the record.

I would like to ask Dr. Rachel Lane to address the issue of the health worker study.

DR. LANE: Rachel Lane, for the record.

The CNSC has been committed to conducting

studies of uranium workers and we updated the Eldorado Study several years ago and that work is widely used to better understand the health effects of radon.

And most recently we have initiated a plan to conduct a Canadian study of uranium workers that will include historic databases of uranium workers as well as the more current workers in Northern Saskatchewan and processing and fabrication workers in Ontario. This is a huge study, about 80,000 workers, that we are initiating now in partnership with the Saskatchewan government and the uranium industry. We are planning -- we are hoping that the University of Saskatchewan will administer this for us and provide us scientific help.

As well, we have presented to the Northern Saskatchewan EQC and we have presented this plan to the meeting that was conducted in September, and right now we are in the process of writing letters to the communities letting them know that we are starting this study and wanting them to either just be kept updated on the progress of the study or to have more participation in the study through the study working group.

I am going to pass this over now, if you don't mind, to Andrew and he can respond a bit further to other issues, unless you have questions to me.

THE PRESIDENT: No. Thank you for the update on the worker health study.

MR. McALLISTER: Just a quick addition. Notwithstanding the different studies that are underway as part of sort of the regulatory oversight -- I'm sorry, it's Andrew McAllister, for the record -- is that all the licensees have their environmental risk assessment that they have in place that includes a human health risk assessment component that looks at traditional hunter and gatherer and the impacts the operation of that facility may have on them, and the results of those risk assessments indicate that the food is safe to eat, the water is safe to drink.

But I will just preface things by saying that's sort of the Western science risk assessments that are done and we certainly recognize the Indigenous knowledge and certainly as we move forward in our oversight is how we can better bring that Indigenous knowledge to bear in what we do.

THE PRESIDENT: Well, we have heard a very different perspective where cannot harvest, cannot gather, cannot fish, cannot drink water, and then, you know, staff's assessment is everything is safe and acceptable. It is hard to reconcile those two.

Cameco, what do you have to say to that?

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

I think that I am going to ask Kevin Nagy to talk a little bit more about the monitoring that we do in Northern Saskatchewan and then I will ask Kristin to add a little bit of context around work that we do in relation to community vitality monitoring.

On a couple of discrete issues, I just wanted to touch on Woodland Caribou and the work that we have done in Northern Saskatchewan. It has been a multiparty, many-year effort to reach the conclusion that the population in the area where our operations are is both self-sustaining and secure, one of the most secure populations of Woodland Caribou in all of Canada.

The Barren-Ground Caribou, the status of that particular species is currently undergoing federal consultation. The range for that particular animal is limited to the northeast portion of the province, some distance removed from our operations. So we take some comfort in relation to those studies about the different Caribou -- the Woodland Caribou that are near to our operations.

In relation to care and maintenance, we

have maintained a number of employees on site and the primary focus of those employees is water treatment and compliance with all the applicable licences and approvals, both provincial and federal, that we have to comply with as well as looking after the vehicles that are left onsite, the various pieces of mobile equipment, so that when the market does return that we can move forward with plans to restart those operations as quickly and safely as possible in that regard.

So there are assurances in relation to that and, as you saw earlier from CNSC staff, the regulatory oversight in relation to those operations, despite being in care and maintenance, has not diminished and in fact, you know, has continued at about the same level. So the level of regulatory oversight has continued at the same level and our care for those facilities and the treated water that we release continues even in care and maintenance.

MR. NAGY: Kevin Nagy, for the record.

We have comprehensive environmental monitoring programs at our facilities, but I will just discuss them briefly here.

Under our CNSC licences and provincial approvals to operate we monitor the quality of the treated

water we discharge to the environment, be that on a specific pond if it's on a batch release basis or regularly if it's on a continuous basis of release to the environment. Downstream we monitor the quality of the water, sediment, fish for tens of kilometres downstream from our operations. All this information is regularly reported to the CNSC and to the province and we also take opportunities when we meet with the Northern Saskatchewan EQC or the subcommittees of our northern collaboration agreement partners to discuss that performance.

In addition, there is community-based monitoring that happens in Northern Saskatchewan through the Eastern Athabasca Regional Monitoring Program. As staff noted in their presentation, there is a community-based monitoring component to that program that happens every year in all seven Athabasca First Nations or communities, and country food such as fish, wild game, berries and the water in and around the communities, at locations decided upon by community members with the assistance of a third-party contractor, are sampled and the results of these programs routinely demonstrate that the food is safe to eat, the water is safe to drink and of better quality than food that I would buy at a supermarket in Saskatoon.

Mr. McAllister mentioned that all this information is also fed into environmental risk assessments that we update on a five-year basis in line with our management programs and those assessments continually show that we are operating within the objective of our licensing basis and that the environment and human health downstream of our operations is protected.

THE PRESIDENT: Were you surprised with what we heard from the intervenors?

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

We were taken aback by what we heard. I think that the point of the collaboration agreements and the subcommittees is to have the representatives from the communities who are on that to raise concerns and for those subcommittee members to take concerns back or take information that is provided through those subcommittees back. It is a process and, as Mr. Schmidt has indicated, our relationship with the Ya'thi Néné has been very professional and we believe that there are opportunities perhaps to enhance the communication.

The representatives that are on the joint environmental subcommittees under the various collaboration agreements are appointed by the communities and Ya'thi Néné

has a seat, as does Cameco and Orano. So in that conversation we believe that there is a lot of very positive messages that have been conveyed and reconveyed, and apparently there's maybe more we could do to enhance that messaging and make sure that it comes back, but that is a process that Kristin and her team are working through and continue to work through as we continue to implement those agreements.

THE PRESIDENT: Maybe I will ask Orano Canada Limited if you have any comments you would like to make with what we have heard?

MS SEARCY: Hi. Tina Searcy, for the record.

Instead of repeating everything that Cameco has mentioned, Orano does have similar regulatory requirements to monitor effluents and the environment for our facilities and we are partners with the programs that Cameco has already noted.

I do second Liam's concern in the communication efforts that Orano and Cameco are endeavouring to disseminate information to the communities. We are presenting at community workshops our community monitoring program results. So if there are areas to improve we look forward to talking with the AJES and other

joint committees to find a better path forward.

THE PRESIDENT: So yes, I totally agree there is clearly more work to be done. There seems to be quite a large disconnect between the concerns that have been expressed by the Chief and other members and what we are hearing from staff and the licensees around how much the community committees are working.

Well, let's open it up to the Commission Members and we will start with Dr. Berube.

MEMBER BERUBE: Well, first of all, I would like to thank you for coming and it is good to see you. And, Chief, welcome back, it's nice to see you again. And I want to point out that it's extremely important to the Commission that your voices are heard, so we really appreciate your efforts to come and see us in person and to express your deep-seated concerns for your community and the welfare of your people. We cannot overstate how important it is for us to hear this directly from you.

That being said, one of the chief concerns from the intervenor here has been around water security and in particular I think that has to do with effluent and effluent sampling methodologies. Maybe you could elaborate on how that is being done.

CNSC, first of all. Is this being done on

a continuous basis at the effluent outfall or is it being done on a sampling basis periodically? What are we looking at here?

MR. FUNDAREK: Peter Fundarek, for the record.

I would like to ask the licensees to start with that and to describe their effluent monitoring programs.

MR. NAGY: Kevin Nagy, for the record.

So under our licence programs, three of our facilities release effluent on a batch or a pond basis. So as we treat that water and fill the pond there is a composite sample that is collected, it is analyzed and if it meets the requirements for release, that pond is then released. As we release the pond another composite sample is taken, that sample is analyzed and that is what we report to both the CNSC and the province as part of our licence.

We have one facility at Rabbit Lake where water, treated water is discharged on a continuous basis. Under that requirement that effluent is monitored on a weekly basis, with samples analyzed and results sent to the province and the CNSC, although we also have internal checks as well throughout the treatment process to ensure

that the plant is operating as per specifications and ensuring the quality of the water that is released.

When we move further downstream, close in the downstream environment those samples could be collected on a weekly basis. As we move further downstream where you would expect to see less change, those samples would be collected on a monthly or quarterly basis and again analyzed and results submitted for regulatory review.

I'm sorry, I might also add that we also have standardized procedures and work instructions that our staff follows with respect to collecting samples. So we have quality assurance, quality control measures to ensure that the practices our staff take in collecting the samples and the practices taken when they are being analyzed either at facilities at our operations or at a third-party laboratory that we have confidence in the results that are coming back.

MR. MOONEY: I'm sorry, I was just going to add two more things quickly.

One was that the staff who are typically taking those samples are environmental technicians. A high percentage of them are residents of Saskatchewan's North and that is one of the vehicles for communication that we often look to, is that the people who work at our

operations carry that message about the importance that we put on environmental protection back to their communities.

I think the other step out, if you will, we talked about the Eastern Athabasca Regional Monitoring Program and Community-Based Environmental Program, those are essentially cumulative effects programs, so they are much further away from our operations and are, as Kevin had indicated in an earlier response, community-driven about the sample locations. Usually they involve having a community member either doing the sampling directly or in conjunction with a third party who has to follow the requisite sampling guidelines and procedures. So that is one further step out in relation to the environmental sampling programs that we have and they were designed to provide those broader assurances with respect to the water and country foods and that they are safe to eat and drink.

THE PRESIDENT: Dr. Demeter...?

MEMBER DEMETER: Thank you very much and thank you for coming. I'm sorry to hear about the passing on of your young members.

I wanted to follow up on a disconnect and get some feedback from the Chief about there's collaborative agreements and there's committees that you have members on, but the messages I have heard from you

seem to be very different from the messages from the industry and CNSC staff.

So do you have communications with your members that are on these committees and feedback? Is there some kind of communication that sort of -- help me understand why there is such a difference in opinion despite these mechanisms to have communication and membership on these committees?

CHIEF MERCREDI: For the record, Chief Louie Mercredi.

Yes, we get feedback from our representatives, but we put new people in place every other year and, you know, the people that we put in these areas are not too familiar with the industry, how these industries run. So they are not too familiar with what information to give us, to the leaders in the surrounding communities. If that answers your question?

MEMBER DEMETER: I think so. How much control do you have over who you pick to be members? Because you have members who probably work in the industry, so do you have control of who you send to be representative on these, and if you do, would you selectively choose people who may have some familiarity with the industry?

CHIEF MERCREDI: Yes. For the record,

Louie Mercredi.

Yes, we do pick the people that work at these industries for many years, the people who have the knowledge or the experience with how the approaches are handled with mining, and there are times that, you know, we don't get all the information that we should be getting due to the employee is at work and, you know, always travelling on the road and there's some information exchange issues at times. But we know the changes, that's who we are, the Dene people of the affected communities. We know the changes, the health changes, the animal behaviour, the environmental changes. We know because we live there. We know all these changes are happening.

The industry representatives, they don't live in this area and they seem to make a good report of how things are going. They don't understand the way we live. They don't see the big picture of how we live in the North.

Thank you.

MEMBER DEMETER: Thank you very much.

THE PRESIDENT: Dr. Lacroix?

MEMBER LACROIX: Well, thank you very much, Chief Mercredi, for this intervention. It's always enlightening.

One of the thing that I cannot reconcile are the recommendations made by the written submission and your discourse in the sense that the recommendation seems to focus on communication, but what you're telling us, Chief, is it's more than a problem of communication. It's a cultural clash, if I may say so. So could you elaborate on this, please?

CHIEF MERCREDI: For the record, yeah, like I said earlier, we do have communication errors at times. And you know, I don't know if this is going to answer your question, but I know, like I said earlier, we know the changes are there. The effects are there. The impact is there. Because we are Elders. Our Elders have been watching over our land for us for tens of thousands of years. It's a carry-on from generation to generation. And a lot of our Elders are passing on as well with the knowledge, the changes that they had experienced. And these knowledges are passed on to us to carry on for future generations.

THE PRESIDENT: Chief Mercredi, as a follow-up, you heard from Dr. Irvine about the study or the follow-up study that they're doing there, and you've heard from CNSC staff on the study on uranium workers.

So if you take the CNSC study -- which

hopefully meets your third party, because you know we are an independent organization -- would that study help alleviate some of your concerns, give you reassurance that it's being looked into by an independent group, you know, with I'm sure a high level of engagement with you and your community?

CHIEF MERCREDI: For the record, Chief Louie Mercredi.

Yes, the third party health study would be a huge benefit for our people. This was a recommendation that was made by myself and my other two colleagues, as Chief Sayazie of Black Lake First Nation and Chief Bart Tsanni of Hatchet Lake First Nation.

We will be more comfortable when we get a third party study for us, for our people. As other chiefs have mentioned, they're not too comfortable with the studies that are done by Dr. Irvine.

THE PRESIDENT: So my question to you was the study that the CNSC has got underway, does that help you?

CHIEF MERCREDI: Yes, if we were -- we didn't even know this study was happening. I didn't know nothing about it. And I'm sure my colleague here doesn't. He doesn't know anything about it as well. So there's a

miscommunication there again.

THE PRESIDENT: Okay. So then, moving aside from the environmental and health impact, one of the big areas of concern is communication or lack thereof and also the different media that are being used, that emails and websites really don't lend themselves to effective conveyance of messaging. So I'll ask staff first to comment on that, and then we'll get the two licensees after.

MR. FUNDAREK: Peter Fundarek, for the record.

So the licensees are required to have both a public information program and an Indigenous engagement program as part of their licensed activities. And these are carried out by each licensee and the results of which are looked at by CNSC staff to ensure that there is opportunities for engagement and outreach provided in local communities.

In addition, CNSC staff conduct their own outreach, their own activities. We engage with the environmental quality committee in Northern Saskatchewan. We've made presentations there in the past. We've provided information and acted as a resource if there's any information required by the committee, both during the

meeting and following the meetings we've provided the information. We've also met with interested groups as necessary if they've expressed an interest in meeting with us and engaging with them.

So we have a lot of opportunities for meeting with communities and Indigenous groups that are interested in learning about what the CNSC's doing and how we're doing our job and how the regulatory oversight is being applied or if they have special concerns.

For example, following the incident at Key Lake, CNSC staff along with licensee staff travelled to the northern region. We tried to get to a couple of communities. One was unable for us because of weather concerns that day, but we did make it out to Patuanak, and we did meet with community members there to describe the situation that occurred in Key Lake in December. This was in -- this was now the following April, April of this year. So we did provide information to the community members. We answered their questions. We tried to address their concerns, and we committed to coming back for a follow-up information session.

So for those kinds of information opportunities, we take the initiative to get out there and get into the communities and try and communicate directly

with the community members as much as possible.

But I'm going to turn the information over to Mr. Adam Levine to provide further information on Indigenous engagement and perhaps Ms. Meghan Gerrish to talk about the public information programs.

THE PRESIDENT: So I don't necessarily want to hear about what the program is. I want to hear about, with the concerns that we have raised, what are we going to do differently, if anything?

MR. FUNDAREK: Peter Fundarek, for the record.

Yes, that is something that we're always looking at. We're trying to find best ways of providing that kind of communication. As I indicated, we've done that -- we've gone to the communities for specific information sessions where possible on specific events.

But we're always looking for opportunities for improving the communication. We worked very diligently with English River last year to try and improve the level of communication, and we're going to continue those kinds of efforts, and we're trying to find the best ways to get the information out.

We recognize the difficulties, the geography associated with northern Saskatchewan and the

difficulties in communicating and visiting these individual communities that are there. But we are going to make a concerted effort to continue to look at opportunities and how we can best communicate and provide the information as necessary.

So we are -- it's a process of continuous improvement and we're hearing the concerns that are expressed that they're not getting the information that they need. And part of our mandate is to provide that information, and so we're going to find ways to get that information to them.

THE PRESIDENT: Mr. Levine?

MR. LEVINE: Adam Levine, team leader, Indigenous Relations, for the record.

So hearing the concerns directly from the leadership here is extremely important.

And for example, last year what we did is we talked with community leadership to find out how we can better communicate on a regular basis. So the first step we did was we started doing an annual leadership meeting. That's the meeting we had in September in Prince Albert. And we had over 25 leaders from northern Saskatchewan Indigenous communities, including the leaders here today. And that meeting was really focused on talking about this

regulatory oversight report and talking about compliance activities.

And what we committed to is that each year at a baseline we will be meeting once a year with all leadership and talk about the concerns of interest. So Chief Mercredi, he raised the concern around health impacts and cancer rates in his communities. So that's where we then committed to coming back and talking about the uranium workers health study, the Canu study, and bringing Dr. Lane and her colleagues to come speak about that. And as Dr. Lane just indicated that we're going to be sending letters very shortly to each community to engage on that particular study, because it's just getting underway.

So the one thing we've learned is that direct communication with leadership is extremely important, that yes, putting things online and doing info subscriber push-outs is good, but it doesn't reach the leadership. Because community members will go to their leadership to ask questions and find out what is going on out there, what's going on with industry, what happened with this truck, et cetera. So we want to make sure we're equipping community leaders with the right information and have that information provided immediately.

So we always send emails directly to

community members and leadership as soon as we have information that would be of interest to them. So we're always looking at what are they interested in, what is something that they'd want to be aware of. But you know, beyond just those types of things, so we want to sit down directly and hear about some of the recommendations and how we can improve things, because we're always open to making things better, because obviously there is a disconnect there sometimes.

THE PRESIDENT: And one of the recommendations made by Mr. Schmidt, which is very interesting, is you know there's a requirement around public information programs or Indigenous engagement, but how do you actually assess comprehension. And how do you assess comprehension and understanding? May not get acceptance, but at least understanding of the risks or the lack there of risks.

Maybe I'll get licensees to comment on that.

MR. MOONEY: Liam Mooney, for the record. Rather than cover the ground about the public information program that we have and our efforts to carry that out, I think looking at our collaboration agreements, they do specify that if we have an off-site

release that there is a requirement to notify the leadership of the communities directly in relation to those events. But --

THE PRESIDENT: And sorry, how does that notification happen?

MR. MOONEY: We don't have those events very often at all, so that would likely involve knowing some of the work that we had to do when we took our sites into care maintenance and recognizing the impacts that would have on our employees and the communities in the North, we had a concerted effort to reach out by phone as much as possible and speak to people directly. So I'd anticipate that would look the same if we were to have one of those very unfortunate days.

But to back it up, in relation to the collaboration agreements with the three First Nation communities and the four municipalities comprising the Yáthi Néné Collaboration Agreement, the subcommittee that struck there is the conduit that we're supposed to talk about environmental performance with. We would take the view that discussion around that, the understanding and the conveyance of -- dissemination of information, to use CNSC staff's words, it would be one of the places we would look as far as assessing comprehension.

We really do look at existing safety and control areas as being informed by those things that we as licensee have control over. And this is essentially an assessment of the effectiveness of the program. So rather than a separate control area, it really is, you know, how are you doing in relation to your intent of your programs.

But we would nevertheless point to the AJES community with the Yáthi Néné representation on it as being the forum for discussing how we could improve the reporting we hear, you know, to go beyond a website posting and look at conveying that information into the communities and equipping the members who are on those subcommittees to carry that information back, which I know has been a focus with our involvement in the northern Saskatchewan environmental quality committee's another venue that we convey our environmental performance on and the community representatives sit on that subcommittee and that's administered through the Saskatchewan Northern Mines Monitoring Secretariat. And it's another source of information to be brought back to the community. And it's long been a challenge there to give the representatives the necessary tools and capability to convey the information that is presented to that committee as well.

THE PRESIDENT: Orano Canada Inc.,

anything you wish to add?

MR. LAFLEUR: Glenn Lafleur, for the record.

I'm the representative for Orano in the Joint Engagement and Environment Sub-Committee, and we utilize the committee to disseminate all the information that's necessary that goes to chief and council or to the community. We meet on a quarterly basis.

And the lands and resource office serves as a technical team for AJES. And both Orano and Cameco give financial resources to help the communication go from the lands and resource into the seven communities. And the reason why we do that is to build capacity where the communication will go from the companies to the AJES, because they're part of the agreement that was signed, the Yáthi Néné.

And then the lands and resource office then is the technical component for the AJES. And they then go communicate that information to the communities. And that's how we've been operating.

And then both Orano and Cameco, we have community liaison workers in each of the First Nations reserves. And we use them as communicators of information in regards to the four pillars that we have in the

agreement, workforce development, business engagement, and then AJES, and then also community investment. So any information that needs to go into the communities, a lot of times we utilize the community liaison staff to do that.

And you know, based on the agreement, the chief and councils in the three First Nations appoint their reps to the AJES committee, and then the three municipal communities have one rep that represents the three municipal communities. And then from there, that's the communication plan we have.

And I'm kind of taken aback a bit to hear that the information is not going to the community. I believe we've done -- in my mind, we've done a good job setting up a plan. And where the disconnects are, I think we should have to review those, because annually as an AJES committee we make a work plan on an annual basis. So presently we're just reviewing our work plan, and perhaps we can look at some of these gaps and try to apply them to our 2020 work plan, so then we can improve the communication if there is any concerns from the community. Thank you.

THE PRESIDENT: Thank you. I think that would probably be a very good thing to do for AJES to look at what we've heard today and see if your work plan for

next year needs some changes.

Last round of questions. Dr. Berube, please.

MEMBER BERUBE: Just while we have you here, Chief, because it's important. We're talking a lot about communication, but I'm hearing two different languages in the room. I'm hearing, you know, what I would consider to be a normal cultural communication, the way we talk about communication is different than the way you talk about communication. I think that's one of the biggest problems.

So if you could just help us understand how is knowledge normally transferred within your community? I mean, that's a big factor. I think this is what's going on is that, you know, we send you stuff or we think we're sending you stuff, which is the way we operate over here. And over here, the way you share knowledge within your community is very different. And so how does knowledge get shared within your community?

CHIEF MERCREDI: For the record, Chief Louie Mercredi.

I think there is a lot of communication errors with the industry and the First Nation communities. They impact the communities.

I think we need the direct information right from the company. To do the presentations to our people instead of having third party people doing -- passing on their message. I think that will -- that's going to be -- there will be more information exchanged if the company does their presentation to the people.

The only time we see these companies come to our communities is when they need support, when it's time for renewal of their licences. Before it was up five years operation for Orano, which was AREVA Resources back then. But now they change their name, they got a 10-year operating licence. Five years prior to the -- for the extension, we haven't seen the company in our communities. But now I can see, I can tell you, we're not going to see them for the next 10 years. They got what they want.

And the knowledge is passed on from our Elders and also the people that worked in the mines, the nuclear workers. I personally worked at the mine for 13 consecutive years. I worked for Orano and I also worked for Cameco as well. And I have the knowledge, I have the experience of the industry. I know how they work.

So with the information error, I think that's a simple fix. If the industry can just come to the communities and do their presentation with the general

public instead of having the liaisons do their work and liaisons get the pressure. There's a lot more information will be exchanged if the industry comes to our community, do their presentation on the changes that they are making and recommendations that they are making and putting in place.

And talk about capacity-building. We've been operating these mines for the past 40-some years in Rabbit Lake and almost 30 years for Orano. I know they started out the Cluff Lake as well. That's where I started my employment with AREVA Resources. They're still in the process of capacity-building. It should've been built already. How much longer do we need to work on this building what -- how we can make things better for our people? The lifespan of these mines is coming to an end. These mines are only there for 30, 40 years.

But the impact is there, and we are paying the price as the land users, the impacts that we see. Losing our people, losing our land, the climate change that we're experiencing. We live in isolated communities. We cannot predict or rely on the ice roads no more due to the climate change. This is another impact that we face, isolated community.

Going to give you a good example. Last

year in January, the highways of Saskatchewan opened up the ice road to Fond du Lac. It was minus 40-plus. As the weeks go by, they increase the weights to give when -- I think it was the end of January -- they give us full capacity weights for the ice roads. Three days later, the temperature changed to plus two. The road had collapsed. We're isolated again. Historically in the past, back in the '80s, our ice roads used to last up to three months if not greater, depending on the weather. But now we're lucky if we get two weeks out of ice road.

So the industry can do their own presentation with our people. There will be better information exchanged. Thank you.

THE PRESIDENT: Thank you.

Dr. Demeter? Dr. Lacroix?

Okay, thank you very much for your intervention.

We will move to the next presentation from the Prince Albert Grand Council as outlined in CMD 19-M36.2.

Dr. Michell and Dr. Mamu Abdulla, are you there?

DR. MICHELL: Good morning. Can you hear me?

THE PRESIDENT: Yes, we can. Okay. Over to you.

CMD 19-M36.2

**Oral presentation by the
Prince Albert Grand Council**

DR. MICHELL: Good morning.

THE PRESIDENT: Good morning. Yes.
Please proceed with your presentation.

Dr. Michell, are you there?

--- Pause

THE PRESIDENT: Okay. Please proceed with your presentation.

MR. LEBLANC: We can see you, we can hear you, so please proceed with your presentation.

THE PRESIDENT: Okay. Well, why don't we proceed as though this -- okay. Last try.

Can you hear us?

I don't think the technology is being very cooperative. We will proceed with this as a written submission.

DR. MICHELL: (Indiscernible)

THE PRESIDENT: Okay. Start again.

DR. MICHELL: Good morning.

THE PRESIDENT: Go ahead.

Okay, we will proceed with this as a written submission and we'll open the floor up for questions.

Dr. Lacroix.

MEMBER LACROIX: Well, yes, I do have a question that I found -- well, I found something quite interesting in the submission, and it's about the -- what you call the Indigenous based restorative process for conflict resolution.

And I was wondering, could you expand on this and how would you implement it so that the activities of the industry would become safer in your neck of the world?

I see. Okay. Well, I'm not sure that -- could anybody in this room answer to me this concerning what they call the Indigenous based restorative process for conflict resolution and how it could be used for safety -- well, to resolve safety issues?

MS CUDDINGTON: Kristin Cuddington, for the record.

We provide awareness at our sites. One of the levels within the agreement is know your neighbours.

It's information focused on the geographic and cultural context of the region in which our operations are located, and it will be part of an orientation process going forward.

During production, we have site elders that counsel and advise northern employees in addition to our community liaison staff.

MEMBER LACROIX: This initiative comes from the First Nation or does it come from Cameco?

MS CUDDINGTON: This is done within our collaboration agreements as a point of -- a point to which we will focus moving forward of interest from the communities.

THE PRESIDENT: Okay.

Dr. Berube?

MEMBER BERUBE: I'm just looking at the intervenor's response here on page 5. And they're asking about leaks and incidents on sites.

What I need to know, basically, is how are these things reported to the public in general? Is it through this ROR process? Is it just done, you know, on the event?

How exactly is it happening? Because we're hearing communication over here and this clearly says

communication's an issue as well.

Could you elaborate on what happens under a major spill situation?

MR. FUNDAREK: Peter Fundarek, for the record.

I'm going to ask Mr. William Stewart to respond to this question.

MR. STEWART: William Stewart, for the record.

Significant spills and events would be reported through EIR process and directly to the Commission. Other events are reviewed as they're reported to be placed on to the CNSC web site as well as we ensure that all spills as reported are posted on the licensee's web site.

In terms of direct communication, the ROR provides the details for the spills more than what's posted to the web sites.

So those are the primary sources of communication.

MEMBER BERUBE: I'm just curious from the operator's standpoint, do you actually notify the local community if you have a significant spill?

I mean, how do you actually do this?

MR. NAGY: Kevin Nagy, for the record.

As Mr. Mooney mentioned earlier in response to a question, we don't typically have very significant events at our facilities. Most of them are minor and have little to no environmental consequence.

When we do have reportable releases, discharges, those are reported to the regulatory agencies in a timely fashion. We also post those -- a summary of those events on our web site.

We also take the opportunity at our quarterly engagement meetings with the sub-committees under our collaboration agreements to discuss these events and answer any questions that the committee members may have.

And in the unlikely and unfortunate event that there is a significant release that does have off-site impacts, as Mr. Mooney mentioned earlier, we would reach out in a timely fashion to the communities.

MEMBER BERUBE: So the reason why they haven't heard much is because there's not much to hear.

MR. NAGY: Yeah, knock on wood.

THE PRESIDENT: Dr. Demeter.

MEMBER DEMETER: Thank you.

I wanted to drill down a little bit more with the uranium workers study that had been discussed

earlier by Dr. Lane and get a sense whether there's an opportunity, probably through self-declaration of the participants, whether they relate to an Aboriginal-Métis group so that you could tease out the data to give some reassurance that the populations of uranium workers don't have different health status.

DR. LANE: Dr. Rachel Lane, for the record.

Unfortunately, that information is not available in the information that we'll be using. What we are using is information from the historical Eldorado study which is very old data, the Ontario miners study, which is also old data, but now for the current miners the National Dose Registry.

So that information has information on all nuclear energy workers in Canada, but we're teasing out the uranium miners and -- uranium workers, sorry, from that huge registry. But the information is -- status is not indicated when you are employed by Cameco or Orano.

Now, we do know that a large portion of workers are from the north, so that is a good indication of what the health effects would be knowing that half of the population are northerners.

MEMBER DEMETER: Is -- I guess is there an

opportunity to do data linkages to -- I know that information wasn't collected prospectively, so it's difficult to impute it without that. Any data linkages to other databases to help -- obviously with an automization personal information to get a grab sample? Any kind of indication? Or prospectively to start something.

DR. LANE: There are various different ways. Maybe a nested study within the study would be a good way -- approach to do it.

We are just starting trying to get the collaboration together, and we'll be developing a study working group next year and we'll be meeting with that group to see if there are any sort of off-projects from what we're doing.

So there's always opportunity to do a focused study and perhaps be able to get some really good information on the proportion of workers who are Indigenous.

MEMBER DEMETER: Thank you.

Because I recall whenever we have these discussions and we talk to the licensees, they can usually tell us what proportion of their staff declare or self-identify as Aboriginal-Indigenous, so that information is somewhat there and I think it'd be reassuring to have

some kind of sample so that we have a homogenous health outcome which spreads across all the workers to make sure that there's some comfort that the Indigenous workers feel that they're being represented in that data and that their health status is being reflected accurately. That's what I'm trying to get at.

DR. LANE: Rachel Lane, for the record.

The fact that this has been raised here, I will certainly take this very seriously and I will approach the companies and the workers to see if there's any way that we can do this. Maybe not for the entire study, but for at least a section of the study so that we can have some confidence that we can focus in on Indigenous communities.

MEMBER DEMETER: Thank you.

THE PRESIDENT: So I understand we've got our representatives from the Prince Albert Grand Council joining us via teleconference.

Can you hear us?

DR. MICHELL: Yes, we can. This is Dr. Herman Michell and Dr. Mamu.

DR. ABDULLA: Hi, this is Mamu.

THE PRESIDENT: Hi. So unfortunately, we got started with asking questions on your written

submission, but we'll give you an opportunity to make your presentation now orally if you'd like to proceed with that, please.

DR. MICHELL: Yes. Madam Chair, for the record, my name is Dr. Herman Michell and I'm sitting here with Dr. Mamu.

We are both consultants, and we here today on behalf of the Prince Albert Grand Council, which is located in northern Saskatchewan.

Prince Albert Grand Council advocates on behalf of 28 northern communities in the province of Saskatchewan under the umbrella of 12 First Nations. Our population is approximately 44,000 people. We're part of Treaties 5, 6, 8 and 10. They are from the Cree, Dene and Dakota cultures.

PAGC communities are directly and indirectly impacted by the uranium mining industry.

The majority of the mines and mill sites that are in the report are located adjacent to northern Dene communities in the Athabasca region. It is imperative that Dene people are fully and meaningfully involved in the environmental assessments, ongoing monitoring and remediation work.

PAGC has a responsibility to ensure free,

prior and informed consent to be upheld by governments and industry for our member First Nations.

Madam Chair, the health of the land is linked to the health of the people. First Nations in our area want reassurance that their lands and their lakes and their rivers and their animals and their plants and medicines and traditional food sources remain healthy during operations and after the closure of mines and mills.

I'm hearing from Dr. -- sorry, Chief Louie Mercredi earlier, and I concur with him that the lands are being damaged and most likely from a host of different factors, but we also know through our work with the caribou -- the woodland caribou and the inland caribou that the habitats are also being destroyed.

We also concur with him and we strongly recommend that there be independent ongoing health monitoring given that there are horrible stories of people getting sick from nuclear exposure, for example, among the Navajo people in the south where contamination is found on the land and in the breast milk of women which is affecting newborn babies.

And I concur with Chief Mercredi that the cancer rates are increasing in the Athabasca region.

Madam Chair, First Nations people share a

strong stewardship relationship with their traditional territories. We have traditional ecological knowledge that is valuable when it comes to the way in which we think about resource extraction and the clean-up of mining sites.

From our world view, all life is interdependent even though the uranium mines are not situated in the -- even though the uranium mines are not situated in the eastern part of the north.

So we recommend that CNSC work closely with PAGC ensuring they play a pivotal role in planning, in administration, in management and environmental assessments, mining inspections, remediation and reclamation efforts.

The Prince Albert Grand Council is willing to provide cultural competency training for CNSC Staff and the uranium mining policy makers, the administration, the management and supervisors, a training program that is tailor made for the northern Saskatchewan context.

Madam Chair, it's not enough to invite elders to meetings and hearings as a form of tokenism without formal processes, protocols of engagement and proper compensation for their collective intellectual property rights.

PAGC is willing to work with CNSC Staff

and strengthen communication efforts. This includes collaborative planning of community forums, local dialogue sessions, land-based gatherings, ceremonial feasts, formal consultations and strategies to engage key local stakeholders.

In that region, the Dene language is really important and oftentimes when PAGC goes up to the area, we require translators and translation equipment to make sure that there is clear communications.

We need to move away from meetings held in far-away places from home that are alien, intimidating and expensive. PAGC recommends First Nations youth involvement in long-term land monitoring of lakes and rivers as well as in remediation-reclamation efforts.

These activities can be part of recruiting them into the pure and applied sciences where they are currently under-represented.

Indigenous guardianship programs are gaining importance. They are a good way to introduce them to mining and environmental careers.

PAGC can be instrumental in assisting CNSC in developing programs that combine scientific and TEK knowledge and skill sets.

And just to go back on the issue of the

depletion of the barren land caribou and the woodland caribou in the region, last winter we travelled to Wollaston Lake up in the Athabasca region to engage the community on a discourse on the depletion of the caribou in that area, and we heard very clearly from the hunters that they now have to travel long distances to hunt.

Now, this violates the treaty right to hunt. It affects food sovereignty.

You know, people depend on the caribou for sustenance and also for cultural reasons. The caribou are part of the Dene culture. If the caribou die, so do the cultures of the Dene people.

We live in an era of reconciliation and we need to live reconciliation. The caribou are a part of our traditional oral stories. They are part of the world view. They are part of the language. They are part of the value system. They are part of the ceremonies.

So it's important that you understand what is going on in the northeast. People experience what is going on on a daily basis. They live it. And it's important that officials from Ottawa come and hear what the people have to say and interpret what they have to say in a meaningful and an appropriate way.

And just for a few more key points here,

Madam Chair, PAGC strongly recommends priority be given to hiring northern First Nations in decommissioned and remediation sites. They know the state of the land prior to mining operations. They have knowledge of what is needed to reinstate healthy landscapes.

First Nations people have been in the regions for decades. They will be in the same place long after those mines close down.

They will be left with the mess created by industry. They will also be left with cleaning up the land.

Lastly, PAGC recommends revenue resource sharing be seriously considered during environmental assessments and prior to awarding licences to the mining industry.

Madam Chair, reconciliation calls to action were adopted by the Canadian government. It is time they rein in mining industry, provide concrete examples of fulfilling these recommendations in future reports.

DR. ABDULLA: Hi, my name is Mamu again, and I am representing Prince Albert Grand Council.

Thank you, everybody, for giving us the opportunity to speak on behalf of the First Nation committee we are representing here.

So my first point is like I would like to know one thing, like what Mr. Mooney has indicated about the woodland caribou. I'm not going to go much detail on that, but this is very disturbing to here that woodland caribou are increasing in northern Saskatchewan. That is not. I'm letting this Commission with all respect to other presenters in here, but if there is a group heading towards north and if we see that group and we study that group, it will be looking like it is increasing. This is not.

And if I can request the caribou study, traditional knowledge study, done through the University of Saskatchewan, I was there. I interviewed 163 elders across northern Saskatchewan starting from Île-à-la-Crosse, Pinehouse, La Ronge, Southend and area like Black Lake. They are passing hard time to say that the caribou population is increasing.

They will be not happy to hear this type of information.

I understand that there is -- there are some studies going on with respect to radio collar. That is okay. So radio collar, this is a big troubling times. They take a section of the information from the landscape, so this is why this type of information coming.

I don't blame them but, at the same time,

look at that. Like if there is a climate change issue and if there is disturb -- more disturbance in the south, then the woodland caribou is a sensitive animal. They are heading towards north.

It doesn't mean that the overall population of the woodland caribou is increasing. So I get disturbed to hear this type of information. But I know that they might have some good thoughts on that. So that should be a discussion to make these type of comments. And woodland caribou is a kind of an umbrella species; it is so many things.

I'm referring to an elder, he's from Île-à-la-Crosse, he said that if you would like to know the landscape, like Northern Saskatchewan, you have to know the woodland caribou. So we are hitting that point and we are just kind of segregated on the idea or the information we are sharing. So we would like to have this type of detailed discussion on that.

I also would like to add one thing, like this traditional ecological knowledge. Like, we would like to use that. So how about like we start something? If we would like to go for a new investigation, how about we start from traditional ecological knowledge study, then we go to the science? Because this knowledge is tested.

They're here for hundreds of thousands of years. So we have better understanding of what's happening with these caribou, what's happening with their land. This is what I heard from many elders I talked to.

I also would like to say, like if you're engaging traditional ecological knowledge, now we say Indigenous knowledge. So there's a big difference on that. Like, traditional means like if you're giving some sort of information, it is like older knowledge; it is not. Like, they're adapting all the time, and it is not bad anymore. So there is new data on this, I hope you already heard about that.

So we heard of their knowledge and we are telling that we are engaging the conservation community. My other fellow member/colleague said that it is tokenism. So how about like we say like, okay, we are engaging traditional ecological knowledge, show in our report that it is the contribution coming from the First Nations.

So if we summarize their information and bring in the report, that is total disrespect to them. They don't want that, this is what I learned.

I hope that I could share some of the information, I know I must. My last thing I must say, that the climate change is creating many troubles. One trouble

I would like to tell in here that is let's say there is -- I don't know if there is a plan or if there is a mapping plan.

I feel like if there's a 3-foot water level high and going higher, what would be the impact of the entire landscape? We have to take the landscape approach, not like we're checking one sample in here, one type of sample there, one type of sample today, another type of sample tomorrow, something like this. That is what scientists do all the time.

I was an environmentalist too, and I did social science, so this is why I am trying to bring this type of perspective. I also talk to many elders at Northern Saskatchewan.

Thank you so much.

THE PRESIDENT: Thank you. Thanks for your presentation.

Dr. Lacroix, maybe now is your time to ask the question that you had of the Prince Albert Grand Council.

MEMBER LACROIX: Yes. Thank you for your presentation. I've already asked this question and I got an answer from Cameco, but I would like to have your own perspective on this.

In your written submission you talk about the Indigenous base restorative process for conflict resolution. I would like to know more about this conflict resolution and how it can be applied to the safety issues that you are concerned with.

DR. MICHELL: Yes. Prince Albert Grand Council just hosted a First Nations Policing and Indigenous Justice Symposium in Saskatoon, Saskatchewan. We talked at length the difference between the punitive system that's in existence right now in the justice system in Canada.

But for First Nations people restorative justice is what we have within our culture across the board, even though our practices may be different. Restorative justice is really about bringing balance into the lives of families, into the lives of communities, within in nations, and nation to nation.

So it's about restoring balance. So if you bring those principles into conflict resolution mechanisms, you would work within that process of bringing the people together that are in conflict. We would be in a reciprocal dialogue session in terms of what we can do together to settle the issue or to settle the dispute.

So in a nutshell, it's about balance, it's a little bit more complex than that in terms of process.

But this is what is used in a lot of our organizations within our First Nation communities, and this is what we advocate for in terms of making sure that the justice system listens to us in an area of reconciliation. Because a lot of our people, as you know, are in trouble with the law and that kind of thing, and so the justice system is really failing us. So we're arguing for a restorative justice model to help us to bring balance back into our communities.

So in a nutshell, if you have any other questions, (inaudible).

THE PRESIDENT: I have a question for Staff. The intervenor talks about the readability of the report and using clearer language and helping translate the information. First of all, I commend you for the simple language -- I forget whether it was clear language or plain language, a summary.

I know amongst the Commission Members they asked, so have you had it assessed to see, you know, what the fog index is or what grade level this is geared towards? Then we'll get into the translation part later.

MR. FUNDAREK: Peter Fundarek, for the record. So the clear-language summary is something that we heard was being asked for at our last presentation of the

ROR last year at this time.

We heard from the Indigenous communities that they wanted to have a clear language summary, something that would be easily translatable. If I recall from the representative of the English River First Nation, she talked about something that her grandfather could use when he's understanding what's going on in his area where he is right now.

So that's the approach we started. So this is a pilot project. We've started this to try and develop something that provides a plain-language summary of the results of the ROR. The ROR is, by full accounts, a very technical document, there's a lot of information in there, there's a lot of data provided.

We've tried to make it more accessible to people so that it's easier to understand. We also took that approach when we did our presentations to the two meetings that we had at the beginning of September.

We adopted an approach where we looked at the information that we were providing from a different perspective to try and help people understand the type of information we were providing, to make it available to people, and we had a variety of speakers available to provide this information so that we could try and make best

efforts to connect with people on a one-to-one basis.

That's why we found it particularly important to have each of the project officers who are responsible for each of the mine and mill sites to present their information and make that personal connection with people in these meetings so that people can see who it is that they're talking to or it's not just some faceless person, there is somebody actually there for them.

So we're looking at all of these things, we're trying to find ways to better communicate. We're going to continue this annual meeting around the beginning of September when the information is available, and hopefully we'll be able to provide this information on an annual basis to communities.

We're looking for the feedback from the communities as a result of these meetings to find out what worked, what didn't. So we've heard already some feedback that we received from these meetings. They want to have more opportunity to spend time dissecting the data, workshop format or something like that. So that's something else we're going to be looking at and see how we can implement it.

So we are taking that. It's a pilot, as I said, for the clear-language summary. But we heard that

this is what the communities wanted, so this is what we've developed.

THE PRESIDENT: Okay. Thank you very much. We'll now take a break for lunch. Come back at 1:45 and continue with the written interventions.

Thank you.

--- Upon recessing at 12:45 p.m. /

Suspension à 12 h 45

--- Upon resuming at 1:45 p.m. /

Reprise à 13 h 45

MR. LEBLANC: Good afternoon. We will now proceed with the written submissions that have been filed by intervenors.

CMD 19-M36.1

**Written submission from the
Saskatchewan Mining Association**

The first submission is from the Saskatchewan Mining Association as outlined in CMD 19-M36.1. Are there any questions from the Commission Members on this submission?

CMD 19-M36.3

Written submission from

Northern Saskatchewan Environmental Quality Committee

So the next submission is from the Northern Saskatchewan Environmental Quality Committee, or EQC, as outlined in CMD 19-M36.3. Questions from the Members?

CMD 19-M36.4

Written submission from the

Canadian Nuclear Association

If there are no questions, we'll move to the next submission, which is from the Canadian Nuclear Association as outlined in CMD 19-M36.4. Any questions from the Members?

CMD 19-M36.5

Written submission from the

Canadian Nuclear Workers Council

The next submission is from the Canadian

Nuclear Workers Council as outlined in CMD 19-M36.5. Any questions from the Members?

CMD 19-M36.7

**Written submission from the
English River First Nation**

The next submission is from the English River First Nation as outlined in CMD 19-M36.7. Are there any questions from the Members on this submission?

CMD 19-M36.8

**Written submission from the
Canadian Environmental Law Association
on behalf of Christie Simon**

The next submission is from Ms Christie Simon, represented by the Canadian Environmental Association as outlined in CMD 19-M36.8. Any questions from Members on this submission?

Dr. Demeter.

MEMBER DEMETER: Thank you. It has been addressed I think in the response to the intervenors, but it might be good to have a discussion for the forum.

The intervenor talked about the time to become compliant with new REGDOCs. Perhaps a summary of the process of adopting a new REGDOC, noting that the old REGDOCs are in place until that happens.

So just to get a sense of the process and usual timeline, and if there are any implications to compliance as asserted by the intervenor.

MR. FUNDAREK: Peter Fundarek, for the record. So the process for REGDOCs is that if there is a REGDOC that is superseding a previous version or a previous CNSC document, so that comes into play, and then the licensees have a period of time to implement it.

But the licensees continue to remain in compliance with the previous version of the document that was in place that provided the same level of safety. So the new version of the document is supplanting that, and we provide them with time to conduct the gap analysis and review the implementation of the new REGDOC if there are any changes that are necessary.

So there is no issue of non-compliance with REGDOCs or regulatory requirements. All licensees remain in compliance, as demonstrated by this annual report. All licensees remain in compliance with all the provisions of the *Act* and the Regulations, it's just a

matter of getting them to have the new REGDOCs added to their licence conditions handbooks.

To discuss further on the process for adding the REGDOCs in, I'll ask Ms Haidy Tadros to speak to that matter.

MS TADROS: Haidy Tadros, for the record. I am the Director General of the Directorate of Nuclear Cycle and Facilities Regulation.

So to basically summarize what my colleague is explaining, is once a REGDOC comes before the Commission for approval to be published we put it on our website and internally we have a process in place whereby we look to see what, if any, industry is applicable to this particular REGDOC.

Having found the applicable industry, we send out letters to say this REGDOC has now been formally approved by the Commission, it will need to form part of your licensing basis, please provide us an implementation plan for when you will be able to meet all new requirements or existing requirements that are contained within the REGDOC.

So once that happens the licensees write us back with their gap analysis, with their timelines. We assess that to ensure that it is relevant and valuable.

Then, from there, we would put the new published REGDOC into their licence condition handbook, making it part of our compliance verification criteria that we would use when we do compliance for that particular SCA or for that particular subject line.

MEMBER DEMETER: Thank you for that summary. Is there, as part of that review of their gap analysis, is there an opportunity for you to say, no, that takes too long, we want it done -- because you could stretch it out. So is there some reasonableness from Staff's point of view to say, you know, that's an reasonable or unreasonable timeline for implementation?

MS TADROS: Haidy Tadros, for the record. Absolutely. It's happened a couple of times where we obviously understand the licensees programs, and the process by which we get to a regulatory document is also done through a consultative process to understand what programs are at play, the impact of the regulatory document or the new criteria will have on the programs that currently exist.

So when the licensees come back with a gap analysis to say we anticipate these programs needing change, we do have an opportunity to look at reasonableness because we already are informed by the programs that do

exist.

MEMBER DEMETER: Thank you.

THE PRESIDENT: So just a follow-up on that. Then for Cameco and their compliance plans with the different REGDOCs, have there been extensions that have been granted or was that part of the original implementation plan? It just seems like there's a whole lot of REGDOCs that still need to be implemented.

MR. FUNDAREK: Peter Fundarek, for the record. For some of the REGDOCs for Cameco they have requested that the implementation of some of those, particularly with respect to training and personal qualification, those be extended until such time as the mines and sites are back up in full operation.

So based on that, we can accept that as a reasonable approach, and so we have adopted it in those cases.

THE PRESIDENT: Thank you.

MR. LEBLANC: Any further questions from the Members? Dr. Berube.

MEMBER BERUBE: I'm just looking at the intervenor's recommendation number 10 with regard to climate change and uranium mines and facilities associated with that.

They're asking, you know, more or less, you know, what are we doing about climate change in a broader sense. But fundamentally, I'm going to ask where are we with the climate change initiatives with regard to mining? Is there anything in process? How are we going to proceed at this point?

MR. FUNDAREK: Peter Fundarek, for the record. So I'll ask that Cameco and Orano address that.

MR. MOONEY: I'm going to ask Kevin Nagy to provide some additional detail. But I think on the climate change story, a big part of the reason that many of us are involved with uranium mining and uranium fuel sites generally is because we are providing fuel for clean air power, and we see that as part of the solution to climate change.

But in relation to how that's integrated into our planning and assessments, I'll ask Kevin to provide some further detail.

MR. NAGY: Kevin Nagy, for the record. Risk assessments at our operations are carried out in accordance with CSA N288.6 standard on environmental risk assessments. So that includes a variety of factors that are incorporated into our risk assessments, and those assess both our operating and decommissioning and

post-decommissioning phases of our operation. One of those factors we consider is climate, both current and over the long term.

Part of the assessment modelling process it looks at a range of inputs. So if you're looking at climate-specific ones, we look at a range of temperatures, both expected and extreme, the same for precipitation, the same for stream flow, river flow, lake levels, that kind of thing. So I would say our risk assessments do incorporate changes in climate.

MEMBER BERUBE: Just on top of that, in terms of your internal operations, you're always looking at optimization I guess in terms of your footprint for climate change?

MR. NAGY: Kevin Nagy, for the record. It has been a while since we brought online a new uranium mine or mill in Northern Saskatchewan. That said, if you look at the existing operations we have now, even the footprints you see at the McArthur River Mine or the Cigar Lake Mine are much smaller and much more compact than at some of the older facilities that you might have seen at Cluff Lake, Key Lake or Rabbit Lake.

Even taking it a step farther, the Millennium mine that we had proposed a number of years back

again -- I call it planning for decommissioning, so you plan for a minimal amount of disturbance. So when you do close and decommission the site the amount of work you have to do at that point is reduced.

MR. MOONEY: Sorry, I think the other aspect of that is there's been a pretty concerted focus on energy management at our facilities and looking for opportunities in that regard, having regard for costs associated with greenhouse gas emissions and working with the operations and find a way forward that does reduce our carbon footprint through those sorts of initiatives.

MR. McALLISTER: Dr. Berube, if you don't mind, we can certainly provide CNSC's perspective on how we're looking at climate change within sort of a regulatory framework. It's really, I guess, multifaceted in nature. There is sort of the overarching higher-level work that's happening.

For example, we're involved in Environment and Climate Change Canada's strategic assessment of climate change, so we're involved in working groups on that looking at how to incorporate climate change considerations into impact assessments, regional assessments, those sorts of initiatives which are a requirement of those pieces of legislation.

Additionally, we're working in other fora, we have folks who sit on international organizations looking at external events, flooding for example. We also have representation on the Canadian Dam Association who are looking at climate change impacts with respect to dam safety.

Then when we drill down into sort of the nuts and bolts of what we do on a day-to-day basis, when we're looking at, for example, submissions from licensees around long-term predictions we're looking at the modelling, looking at the uncertainties, ensure that there's the safety margins in place to deal with those uncertainties that are associated with climate change, for example. So, really, a multi-faceted approach.

One area that we're also looking more at doing is in the area of research. So we're starting to look at what we should be doing from a research perspective. We've recently launched a research program looking at the impacts of climate change on probable maximum precipitation. So really looking at it from a number of different angles from a regulatory perspective.

MR. LEBLANC: President Velshi.

THE PRESIDENT: A couple of questions. One is around recommendation 8 of the intervenors. Both

questions to Staff. This has to do with the National Pollutant Release Inventory database. Where the intervenor seems to indicate that it's the CNSC that does not support the inclusion of radionuclides on this database.

So two parts to the question. Do we not support that? I see from Staff's response that we're going to be linking our information or our database to the NPRI. But if it was to be incorporated in the NPRI, is this something that we would not encourage?

MR. FUNDAREK: Peter Fundarek, for the record. I'll ask Ms Kiza Sauvé to answer that question.

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

The inclusion of radionuclides into the NPRI is an Environment and Climate Change Canada decision. At this point, Environment and Climate Change Canada has determined that they are not a priority for NPRI reporting, as the information is already collected and reported on by another agency, which is ourselves.

In order to further enhance the availability of that data, that is where we are working with Environment and Climate Change Canada to get that information linked from NPRI so it's easier for civil society groups and members of the public to get that

information.

PRESIDENT VELSHI: So the statement here, that the Commission rethink its decision to not support the inclusion, that's incorrect then?

MS SAUVÉ: Kiza Sauvé, for the record.

My recollection -- and I could be corrected -- is that our recommendation to Environment and Climate Change Canada was that it was not -- does not need to be any NPRI. So that is correct then what is in the --

THE PRESIDENT: Okay. You are saying two different things.

MS SAUVÉ: I am going to be corrected.

THE PRESIDENT: I see Mr. Rinker is here.

MR. RINKER: Mike Rinker for the record.

So the request went to Environment and Climate Change Canada, who came to us asking us to help them with their decision, and they have very specific criteria. One of them Ms Sauvé mentioned was that, you know, is the data already available by another federal ministry or regulator. The reason why they have that criteria is because it takes them a substantial amount of effort to make inclusion of another constituent or chemical onto the NPRI and they have their priorities and so this would knock it down as a lower priority. So we didn't make

a recommendation one way or another.

What they did ask of us is if we were to not include it, can we improve access via our website, of which we agreed. And so we have been working with Environment and Climate Change Canada to ensure that licensee data is readily available and within the last couple of weeks one could -- it is still being beta tested and making sure that civil society groups and the public are comfortable with the way the data is presented. But if one were to Google CNSC open data you would find that licensee data is now machine-readable and downloadable on the open portal which will be linked to the NPRI. So it makes Environment and Climate Change Canada's job much easier to just provide a link as opposed to go through their process.

So we didn't make a recommendation one way or another, we just assisted in making it accessible.

THE PRESIDENT: Okay. Thank you.

My second question is to do with recommendation number 9, which is the federal Commissioner of the Environment and Sustainable Development's Spring Report on mines in Canada. So tell me, how is this applicable to uranium mines and mills and what have we done with this report, or should we do anything with this

report?

MR. RINKER: Mike Rinker, for the record.

So if I understand, this is the report for the mining sector from the Auditor General? Is it the --

THE PRESIDENT: I don't know if it's the Auditor General. It says it is the Environment Commissioner, so the federal Commissioner of the Environment and Sustainable Development.

MR. RINKER: Thank you.

So the CNSC has gone through a similar process already in terms of having this external body come in and look at our processes and there were recommendations for improvement, particularly around power reactors and compliance, but that is -- we took those lessons learned and incorporated them throughout the fuel cycle and our inspection, and so our thought is that we have gone through this exercise and made these improvements.

What I understand is there are similar findings for the broader mining sector for what were found when we were audited and so I think the action I would say is closed from a CNSC perspective and that we wouldn't need to do further work.

We have read the report and we will follow. If there is anything that comes up from a

continual improvement point of view, I will certainly look at that, but we don't see any action for now.

THE PRESIDENT: Yes. I think it would be a prudent thing to do just to make sure that what we have addressed for the power plants as a follow-up to that, that there's no new findings here that we should have a look at.

Okay. Thank you.

MR. LEBLANC: Any further questions? Dr. Demeter...?

MEMBER DEMETER: Thank you.

I am going to pick up on the consultant that wrote in the intervenor's thing about some of the radon information and they are making the assertion that radon from tailing management could impact "nearby communities and the environment".

Maybe someone from staff can tell me what the usual dispersion pattern is from tailings and environmentally how far out that can go. Can it even get to a nearby community? Is that a reality or does it get dispersed and settled much closer to the fence?

MR. FUNDAREK: Peter Fundarek, for the record.

So I will ask Mr. Andrew McAllister to answer that question.

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

I will sort of start the answer and sort of base it in the information that was provided in the Regulatory Oversight Report and then I can pass it to my other colleagues who wish to complement the answer.

What we are finding is -- what we have reported on in the Regulatory Oversight Report is sort of the radon concentrations in air relative to the various facilities. What we are finding is that they are below what we are calling sort of regional background or within regional background levels.

The actual, if we drill down, we take the next step down and drill down, so what does that mean from, as you were saying, sort of a dispersion sort of perspective? Not surprisingly, if we were to drill down to the individual monitoring locations, locations closer to sources such as underground workings, waste rock piles, tailings management facilities, we are certainly seeing higher values there. And then as we progressively get further away from those the values drop to such a point that when we get to sort of the edge of the lease of the respective facility we are within those sort of background values. So we are not seeing beyond that sort of elevated

values per se.

I will let Ms Sauv  add a bit more information.

MEMBER DEMETER: I just want to make sure I understand the message before we go on.

So what you are saying is you have collected data to show that you are monitoring out as far as is necessary until you reach a background level, so that monitoring further out or in nearby communities, based on your data and what you have told me as I understand it, isn't going to yield activity from that tailing pond or whatever it is?

MR. McALLISTER: That is correct.

MEMBER DEMETER: Okay.

MS SAUV : Kiza Sauv , for the record.

So I can confirm that the licensee does the monitoring on the site and through some of our IEMP campaigns, Independent Environmental Monitoring Program, we have done some radon monitoring in the near field but outside of the licensee's site and we are seeing below or background values.

MEMBER DEMETER: Okay. Thank you.

MR. LEBLANC: Any further questions from the Members?

CMD 19-M36.9

Written submission from the

Athabasca Joint Engagement Environmental Subcommittee

MR. LEBLANC: So the next submission, which is the last written submission, is from the Athabasca Joint Engagement Environmental Subcommittee, as outlined in CMD 19-M36.9.

Any questions from the Members on this submission from the AJES?

--- Pause

MR. LEBLANC: Thank you, Madame la Présidente.

THE PRESIDENT: Okay. We will open the floor to the Commission Members for any other questions they have on the ROR.

Dr. Lacroix...?

MEMBER LACROIX: Well, thank you very much for the submission, the ROR. It's a very extensive and informative document.

I have noticed that the main source of radiological exposure in the uranium mines is radon progeny followed by the gamma radiation and there is an exception,

which is Cigar Lake, which is the other way around, that is essentially it's first gamma radiation and radon progeny. I was wondering, is it due to the fact that it is the only operating mine, is it related to the process itself or is it related to the high-grade uranium?

MR. FUNDAREK: Peter Fundarek, for the record.

I will ask Mr. John McManus to respond to that question.

MR. McMANUS: John McManus, Radiation Protection Specialist with the CNSC.

The low radon levels at Cigar Lake are primarily just due to the engineering controls at that particular facility. They just basically exhaust the radon gas very quickly before it can accumulate to the point where it would be an exposure of concern. All the mines and mills have similar criteria for radon gas monitoring, at which point if it's over a certain level then they would have to ascertain the dose. The doses at Cigar Lake are -- the radon gas levels are kept extremely low, much lower than a residential dwelling actually.

THE PRESIDENT: Dr. Demeter...?

MEMBER DEMETER: Thank you.

This is a question for Cameco, it's

regarding Cigar Lake.

So there was an uncontrolled release note about on January 24th a decreasing trend in level of treated effluent, Pond D, about 1200 metres square, due to a tear in the liner, and then later on in the description it talks about the tear being related to ice.

Normally when you are before the Commission there is a lot of discussion of how robust and tough and these are engineered and this is to protect from leaks. You are going to have ice every winter in Northern Saskatchewan. So help me understand, one, how often do you get tears in liners from ice, and secondly, how do you mitigate this from a preventive point of view for the future?

MR. NAGY: Kevin Nagy, for the record.

First, I would like to point out that this was a pond that contained treated water, so it met all the effluent release criteria and was acceptable for release to the environment. Because it was an unplanned release from the pond in excess of 1 cubic metre it met the reporting requirements of a discharge under the provincial environmental code. So that is why it was reported to the regulators as a release.

I had mentioned earlier, as we fill these

ponds we take samples, those samples are analyzed before we release the ponds. There is a bit of a delay in getting that sample to the lab, getting that sample analyzed, so during that time the water does sit in the pond.

In Northern Saskatchewan, unfortunately, it does get cold, -40 or even more, so we do have the occasional occurrence where the delay is enough that you do start to have some ice forming and occasionally as the pond is drawn down when you release it, the ice may cause some damage as it is coming down the side of the pond. We do have regular inspections and we repair damage when we do see it. The primary method of mitigating this is trying to keep that lag time while we are analyzing to a minimum.

MEMBER DEMETER: So there is a period of time where you are confirming whether the water is releasable. Is this type of liner only used in ponds with treated water that you are assuming will be released once the lab data shows it's releasable or is this type of liner used for effluent that is waiting to be treated?

MR. NAGY: Kevin Nagy, for the record.

It's an 80 mil high density polyethylene liner. We use those regularly across our operations. These ponds hold treated water, so usually it would be one single layer of liner. Ponds where we are holding water

that has been impacted by the operations before treatment, usually that would be two layers, perhaps with a leakage collection detection layer in between for enhanced level of control.

MEMBER DEMETER: And staff, are you satisfied that for this particular scenario in winter conditions that this is reasonable?

MR. FUNDAREK: Peter Fundarek, for the record.

Yes. Because of the nature of the water that was being released inadvertently, because it was treated water we are satisfied that the situation was managed correctly.

THE PRESIDENT: Dr. Berube...?

MEMBER BERUBE: Yes. I'm looking at the uncontrolled releases, two in particular, ammonia releases, and just looking at the list here I think there are four events, all have to do with valve leaks, valve maintenance. Could you just walk me through quickly how you actually monitor your plant, your physical plant for this and how you detect leaks, if you have, what kind of detection gear you have in place for that?

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

Just having been up at Cigar last week, we are taking a look at that and for sure it has been a focus for the operation to prevent the leaks. We spent a lot of time and resources to replace some of the inner workings of them, the condensers over the last couple of years, but we have also enhanced our detection process for them. And lessons learned from operating McArthur River freeze plants and Cigar freeze plants, there's a lot of cross-pollination between those different operating sites. With McArthur being in care and maintenance, some of that expertise has been moved over to Cigar Lake. So the newest freeze plant that we have at Cigar Lake I just toured last week and in that space they have a laser detection system for -- rather than a single point, for detecting it in actual operating environment and then have the necessary emergency response procedures that are in place.

We have an ammonia code of practice that details what is required at different levels of ammonia in the operating environment and what the necessary PPE that should be donned for the purposes of responding to elevated ammonia levels in the freeze plants.

So overall, I would say that as we have moved through to construction and commissioning of new plants we have taken the best technology that is in place

then, and then we have gone back through our older plants and looked to retrofit where possible additional controls that would assist us in responding if there were to be an unplanned release that would require us to evacuate or to otherwise respond to it.

MEMBER BERUBE: And just to expound on that, you have regular operator walkthroughs, I guess, checking the physical plant all the time, I would think. So people would be monitoring this stuff on a regular basis and maybe be subjective. So you are saying that they are carrying PPE against this if they are actually doing physical inspections?

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

Our operators -- one of the things that we picked up more recently is they actually have personal ammonia indicators that they are able to put on and wear as they do the rounds through the plants. The plants are pretty automated, so for the most part they are just in the control room, they are not actually in the space that is being monitored by the different technology I just discussed.

But in any event, when they do go through there is training that is provided about what to do in

relation to a response and then the necessary PPE is at hand for them to respond as the case may be. Personal monitors is something that we are now looking at pushing out to our other operational plants, the focus being on Cigar because that is the active operating site, but we would bring that to McArthur when we are looking at bringing it back on.

THE PRESIDENT: Dr. Lacroix...?

MEMBER LACROIX: In the ROR CNSC provide information concerning the radon concentration in the mines in terms of becquerel per cubic metre and I was wondering, do you calculate the radon concentration in becquerel per square metre for waste rock pile and, if you do, what would be the limit in terms of becquerel per square metre to reach a dose -- an annual dose of 1 mSv?

MR. FUNDAREK: Peter Fundarek, for the record.

So I will ask Mr. John McManus to answer the question.

MR. McMANUS: John McManus, for the record.

I will just speak to the radiochemical or the chemical properties of radon gas. It's an inert gas, it's a noble gas, so it wouldn't -- it's not particulate,

it's just in the air, so we always express radon gas as an activity per unit volume. It would not stick on the rocks. Once radon gas from radium decays it's an old gas, it will just migrate by osmosis through cracks and rocks.

MEMBER LACROIX: The reason why I am asking this question is that I read a couple of papers where they provided this information in terms of becquerel per square metre for open pit mines and I was wondering if you had a similar type of calculations for Canadian mines.

MR. MOONEY: I can take that back and check. I'm not aware of it myself. As Mr. McManus outlined, it is much more focused on what does radioactivity look like in a receiving environment and not what does it look like at source. So I can talk to our geoenvironmental engineering group and see if there's any calculations in that regard.

MEMBER LACROIX: Okay. Thank you, I appreciate that.

MR. FUNDAREK: Peter Fundarek, for the record.

I know back in the mid-1980s there was a study that was initiated at Cluff Lake where they attempted to look at the radon emanation rate from the rocks. The challenge that we have in Canada is that the ore is in very

thin seams and it's not distributed throughout the ore body like it would have been at Elliot Lake for example, which is a much more homogenous ore body, but because it's in thin seams within layers it's more difficult to monitor for emanation rates because you have a sudden spike when you have the seam available and then there is nothing where the rock is not -- it has no ore in it.

But perhaps my colleagues in DERPA can provide further information.

MR. RINKER: Mike Rinker, for the record.

I was just trying to really understand your question better, but I think you were saying per square metre emanating from surface, and we do not have that. It really depends, as Mr. Fundarek had said, on the rate of flux of gas.

But for comparison, you know, 1 mSv is around 55 Bq per cubic metre.

THE PRESIDENT: Dr. Demeter...?

MEMBER DEMETER: Thank you.

This is a question for CNSC staff.

So in most of your CMD there is a table that talks about authorized annual production and for the sites that are in care and maintenance they're obviously nowhere near that. But there is usually a little footnote

somewhere that says that there will be a carry forward of the unused authorized annual production.

Like uranium prices go really high and so they ramp up production and they use some of their carryover. Are there any safety issues with enhanced volume of production that you have to take into consideration and is there a cap, that even though you have carried over five years, would there be an annual cap from a safety point of view?

MR. FUNDAREK: Peter Fundarek, for the record.

So I will ask Mr. William Stewart to answer this question.

MR. STEWART: William Stewart, for the record.

So yes, there is an ongoing carryover that can ramp up, but there is still annual production numbers as well. They are kept in the licence information.

MR. MOONEY: So yes, there is a limit that we could go into to draw down the build-up of production that we haven't used. I think this is the question you were asking.

MEMBER DEMETER: Yes. So you have carryover, but even in a year where you can do more than

you normally do, per annual you still have another limit how much of your carryover you can use; is that correct?

MR. NAGY: Kevin Nagy, for the record.

I am looking at Table 3.1 on page 42, because I think that specific statement is made with respect to production at the Cigar Lake operation, which by chance is the only one that has production as well currently.

The annual authorized production limit you see there is 9.25 kg U per year. That is the cap. So that would be -- in any given year that would be the highest that we could produce under the current licence or *Licence Condition Handbook*. So that incorporates the flex. Normal annual average production over the life of mine currently sits at 7 million. So when we say we are below production, that would mean we produce below the 7 million mark and then that goes into that cumulative deficiency. So in subsequent years we could produce above 7, but not above the 9.25.

MEMBER DEMETER: Thanks. That answers my question specifically. Thank you.

THE PRESIDENT: Dr. Berube...?
Dr. Lacroix...?

A question for staff. I think it's on

page 5 of your CMD, you talk about other regulatory agencies, whether it's Saskatchewan Ministry of Environment or the Ministry of Labour Relations and Workplace Safety or even Environment and Climate Change Canada. If they have any issues or concerns with the operations of mines and mills, how do you interface with them? Because I know in your concluding remarks I think you talk about enhancing cooperation with other agencies.

MR. FUNDAREK: Peter Fundarek, for the record.

So we do have in Saskatchewan a very close working relationship with our provincial counterparts and then also with our federal counterpart Environment and Climate Change Canada, but particularly with our provincial counterparts we regularly engage with them, we have regular discussions and lines of communications remain open. We participate in joint ventures such as the Environmental Quality Committee meetings where Saskatchewan Environment is involved and we have bilateral meetings from time to time.

I would like to ask Mr. Tim Moulding from Saskatchewan Environment if he could comment on this as well, please.

MR. MOULDING: Hello. For the record, Tim

Moulding with Saskatchewan Ministry of Environment.

As Peter mentions, at the Environmental Protection Officer level we have ongoing discussions. We share our report review information between organizations. We sit together with Environment and Climate Change Canada on *Metal and Diamond Effluent Mining Regulations*, environmental effects monitoring, Technical Advisory Group as well and have from time to time conducted joint site inspections also.

And with respect to the ROR, there isn't anything in this year's report that contradicts or conflicts with any of our report review information or site inspection information that we have gathered.

THE PRESIDENT: Thank you.

And from your perspective, Mr. Moulding, are there opportunities to further enhance the interface between the two agencies?

MR. MOULDING: I think it's working rather well now, but yes, there's always areas that we can improve on, maybe even formalize some of our working arrangements as well.

THE PRESIDENT: Okay. Thank you.

And a question for Cameco.

Is there a time limit that your facilities

can remain in care and maintenance mode before it becomes problematic?

MR. MOONEY: Liam Mooney, for the record.

We have had experience on bringing back facilities that have been in care and maintenance for some period of time. In the early 2000's our Eagle Point mine had been put into care and maintenance and we brought it back successfully, safely. I think it is a question of making sure that the plans are in place and executed properly, but we anticipate that there would be a good deal of dialogue about what those plans are and we would plan to do so safely when the market does turn.

So the short answer would be we don't anticipate that -- we expect that will be a challenge, but we don't anticipate that it will become problematic.

THE PRESIDENT: Thank you.

And another question that I had. So I know when you exceed any action levels, whether it is weekly or quarterly, you have to report that to the regulator, but you have your own internal administrative levels which kind of is an indication that maybe the controls aren't working as well. How often do you exceed those administrative levels? Like say in the last year how often would that have happened?

MR. MOONEY: It's Liam Mooney.

I think that it's safe to say on the radiation administration levels we don't exceed those very frequently either. Typically when that is happening we get to that space where it is a potential loss of control and the action level is in play as well. Then the investigations move forward on that basis. I don't have the precise numbers in front of me, but it is more often than action levels, but not that often in the operating experience for us.

THE PRESIDENT: And another quick question for staff.

For uranium and treated effluents the provincial limit is 2.5 mg/L, but the CNSC interim objective is only .1 mg/L.

Help explain why such a big difference.

MR. FUNDAREK: Peter Fundarek, for the record.

So I will ask Ms Kiza Sauvé to answer that question.

MS SAUVÉ: Kiza Sauvé, I am the Director of Health Sciences and Environmental Compliance.

The CNSC is always looking at ALARA when we are looking at our release limits and we know that the

mines can go lower than 2.5 and so in this case we are -- the limit has been set much lower than the provincial limit to 0.1.

THE PRESIDENT: Because it's readily possible to get to below that?

MS SAUVÉ: The technology makes it very much possible, yes.

THE PRESIDENT: Okay. Thank you.
Dr. Demeter...?

MEMBER DEMETER: Thank you.
Another question for Cameco.

On Table 2.3, which is page 30 of staff's CMD, if you are looking at the parameters of -- most of the constituents here are sort of in line with everyone else, but for nickel you are like two orders of magnitude higher at reaching just over half the discharge limit.

So is the nickel thing a geological factor or is it a different process factor? It's just a bit of an outlier.

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

The Key Lake deposit when it was being actively mined did have quite a significant amount of nickel in the ore and we do mine -- when Key Lake is

producing we do have -- in that environment we pull from some waste rock that was stored on surface. So we would expect to see nickel in those circumstances.

With this being 2018 and not when we were necessarily producing, I think the -- I would still look to the geology as being the root of it. We are not adding nickel as part of our process, so I think it is the effectiveness of the water treatment in response to what the geological setting is.

MEMBER DEMETER: Thank you.

Can I ask one more quick one? This is a question to Orano.

There was an event where there was a discharge of 150 kg of molten sulphur and staff considered it low risk, but maybe you can help me understand. This is the first time I have seen molten sulphur as an incident and maybe you could help me understand the implications and health risks for this form of sulphur.

MR. LANIECE: Vincent Laniece, for the record.

Molten sulphur, as it says, it's molten, so it's fairly warm and it can effectively burn. It's in the temperature of about 150 degrees, something like that, I don't remember that exactly. So when it lands on the

foot or part of the body, yes, it can effectively hurt. That is where the health comes in play.

MEMBER DEMETER: And how often does this type of event occur?

MR. LANIECE: Very unregularly. It occurred once in 2018 and that's about the only time that it happened at the mine site in the last three or four years.

MEMBER DEMETER: And individuals who are unloading, are they wearing specialized personal protection equipment in case there is a splash or a spill?

MR. LANIECE: Correct.

MEMBER DEMETER: Okay. Thank you.

THE PRESIDENT: Okay. Well, thank you very much. This concludes the meeting of the Commission. Thank you for your participation.

Marc...?

MR. LEBLANC: Yes, I will echo you.

Thank you to the Saskatoon office for hosting a lot of people and making this happen.

Safe travels.

If you borrowed interpretation devices, please return them to the reception and claim your ID cards.

Thank you.

Bonne fin de journée.

--- Whereupon the meeting concluded at 2:33 p.m. /

La réunion se termine à 14 h 33