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Public hearing

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Le 8 juin 2017

Kikinahk Friendship Centre
320 Boardman Street
La Ronge, Saskatchewan

Kikinahk Friendship Centre
320, rue Boardman
La Ronge (Saskatchewan)

Commission Members present

Commissaires présents

Dr. Sandy McEwan
Mr. Dan Tolgyesi
Dr. Soliman A. Soliman
Dr. Sandor Demeter
Mr. Rob Seeley

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La Ronge, Saskatchewan / La Ronge (Saskatchewan)

--- Upon resuming on Thursday, June 8, 2017

at 9:48 a.m. / La réunion débute le vendredi

8 juin 2017 à 09 h 48

Opening Remarks

M. LEBLANC : Bonjour, Mesdames et Messieurs. Welcome to the continuation of the public hearing on AREVA Resources Canada Inc.'s application for the renewal of the Uranium Mine Operating Licence for the McClean Lake Operation.

During today's business, we have simultaneous interpretation. Interpretation devices are available at the reception.

- The English version is on channel 1;
- The Dene version is on channel 4;
- The Cree version is on channel 3;
- La version française est au poste 2.

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

I'd like to note that this hearing is being video webcasted live and that the hearing is also archived on our website for a three-month period after the

closure of the hearing.

As indicated yesterday, the Cree and Dene version of the hearing is not being webcast but is being recorded and those recordings would be available upon request.

The transcripts will also be available on the website of the Commission in about two weeks. And to make these transcripts as meaningful as possible, we would ask everyone to identify themselves before speaking.

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

Dr. McEwan will be presiding today's public hearing. Dr. McEwan...?

THE CHAIRMAN: Thank you, Marc.

So good morning. Welcome back to the continuation of the public hearing of the Canadian Nuclear Safety Commission. Welcome also to those who are joining us by webcast and by teleconference.

My name is Sandy McEwan and I will be presiding today.

For those who were not here yesterday, I would like to begin by introducing the Members of the Commission who are with us for this public hearing. On my right are Dr. Sandor Demeter and Dr. Soliman A. Soliman,

and to my left Mr. Dan Tolgyesi and Mr. Rob Seeley.

We have already heard from Marc Leblanc who is the Secretary of the Commission, and we also have Ms Lisa Thiele, Senior General Counsel to the Commission, with us on the podium today.

Marc, over to you for remarks on the agenda.

MR. LEBLANC: Thank you. So yesterday we heard the presentations by AREVA, CNSC staff as well as five intervenors.

Four intervenors are scheduled to present orally today. I would like to remind those intervenors that 10 minutes have been allocated for each presentation, with the Commission Members having the opportunity to ask questions after each presentation. To help you in managing your time, a timer system is being used today. The light will turn yellow when there is one minute left and will turn red at the 10-minute mark.

There is also one written submission that the Commission will consider.

Finally, the members will at the end of these proceedings, proceed with rounds of questions to AREVA and CNSC staff and perhaps other government departments or representatives to complete the record.

Your key contact persons today will be Ms

Louise Levert and Ms Johanne Villeneuve from the Secretariat staff as well as Lori Sukkau from our Saskatoon office. You'll see them going around or will be here at the side of the room if you need information regarding the timing of presentations and documents, et cetera.

I would also like to make a clarification for the record as there may have been a misstatement or a misunderstanding during one of the interventions yesterday when referring to Treaty 6 territory. The words "treaty" and "Métis" may have been used in a manner that may have not been intended. So just for clarity and for the record, we would like to reiterate that Treaty 6 territory referred to First Nation territory.

Mr. Chairman...?

CMD 17-H9.7/17-H9.7A

Oral presentation by Cameco Corporation

THE CHAIRMAN: Thank you, Marc.

The first presentation today is by Cameco Corporation. This is outlined in CMDs 17-H9.7 and 17-H9.7A.

I will turn the floor to Mr. Liam Mooney and the floor is yours. Good morning.

MR. MOONEY: Good morning, Members of the

Commission.

Thank you for the opportunity today to speak in support of the application of AREVA for the renewal of the McClean Lake Mill licence.

My name is Liam Mooney, and I am Cameco's Vice President of Safety, Health, Environment, Quality and Regulatory Relations.

And joining me here today is Mr. Kevin Nagy, our Director of Compliance and Licensing for our Saskatchewan mining activities.

We represent Cameco Corporation, Canada's largest industrial employer of Aboriginal people. Cameco is one of the world's largest uranium producers providing about 17 percent of the world's production from mines and mills in Canada, the U.S. and Kazakhstan.

We are also a leading provider of nuclear fuel processing services, supplying the world's reactor fleet with fuel to generate clean electricity.

Cameco's operations include the Cigar Lake Mine in Northern Saskatchewan. It is the world's highest grade uranium mine with the capacity to power millions of homes with reliable emission-free nuclear energy.

Cameco is the majority owner and operator of the Cigar Lake Mine and AREVA is our joint venture partner.

Since Cigar Lake began production in 2014, all ore has been processed at the McClean Lake mill. As joint venture partners on Cigar Lake, AREVA and Cameco have worked together closely to develop the mine and prepare the mill to process this ore. We also share information on the safety and environmental aspects of the two operations and engaging local stakeholders.

Through our partnership, Cameco has a well-informed view of AREVA's competence as an operator and the company's established measures for protecting the environment, its workforce and the public.

Based on this insight, Cameco fully supports AREVA's application for a 12-year operating licence for the McClean Lake Mill.

The relationship between the McClean Lake Mill and the Cigar Lake Mine has a significant socio-economic impact on Northern Saskatchewan.

Cameco's Northern operations employ 1,666 people, more than half of whom are Aboriginal. We also generate economic activity through our commitments to Northern vendors. For example, in the period between from 2004 and 2016, Cameco procured nearly \$3.5 billion in services from Northern vendors. That represents 73 percent of our total Northern spend.

Our written submissions incorrectly

reports that our 2016 northern business spend for Cigar Lake was \$5.1 million when, in fact, it was \$64 million.

To reinforce our corporate responsibility strategy and meet our commitment to community engagement, Cameco and AREVA have signed collaboration agreements with Northern Saskatchewan stakeholders. These encompass workforce development, business development, community development and environmental stewardship.

In June of 2016, Cameco and AREVA signed a collaboration agreement with the seven Athabasca Basin communities; the First Nations of Black Lake, Fond du Lac and Hatchet Lake, along with the communities of Stony Rapids, Wollaston Lake, Uranium City and Camsell Portage. This agreement evolved from the impact management agreement signed in 1999, which was one of the first in Canada.

Operations at both McClean Lake and Cigar Lake have comprehensive programs to monitor the quality of our emissions and the condition of the surrounding environment. Our operations and the Canadian uranium industry in general have a strong record of regulatory compliance.

In accordance with our public disclosure protocol, we report online and discuss our environmental performance with local stakeholders through community visits, as well as engagement with various northern

environmental subcommittees.

Two examples of community-based monitoring in northern Saskatchewan are the Eastern Athabasca Regional Monitoring Program or EARMP and the community based Environmental Monitoring Program that is conducted under the auspices of the Athabasca Joint Environment Subcommittee or AJES. These programs monitor water and traditional country foods with participation from community members and are managed by CanNorth, a 100 percent Aboriginal-owned environmental services company.

EARMP was established in 2011 by the Province of Saskatchewan to strengthen cumulative effects monitoring and complement existing programs.

Traditional or "country foods", such as fish, berries and wild game are important both culturally and nutritionally to the residents of Northern Saskatchewan.

Two questions often asked during community meetings are, "Is the food in my community safe to eat?" and "Is the water safe to drink?"

The purpose of EARMP is to answer these questions with the support of local community members, including the elders and youth pictured here.

For EARMP, participating communities include the First Nations of Fond du Lac, Black Lake and

Hatchet Lake; and the communities of Camsell Portage, Stony Rapids, Uranium City and Wollaston Lake. All samples are analyzed by the Saskatchewan Research Council's analytical laboratories.

Results of these community monitoring programs have consistently indicated that the water and country foods consumed by the communities are healthy and safe to eat. In fact, they've shown that these foods are, in many cases, healthier and of greater nutritional value than comparable supermarket foods.

The community monitoring program results are published online and widely shared in Northern Saskatchewan. Communication channels utilized include community meetings, websites, brochures and calendars. The programs have also been promoted in Opportunity North magazine and through radio interviews.

In addition, presentations have been made to the Environmental Quality Committee and to schools in the Athabasca Basin through the Science Ambassador program.

Feedback has been positive and local residents appreciate these programs and the assurance that this monitoring provides.

In closing, we submit that AREVA is a competent operator of the McClean Lake facility and is qualified to carry on the activities authorized by the

licence. AREVA also has the management systems and programs in place to ensure the protection of the environment and the health and safety of persons.

Cameco has reviewed AREVA's submission to the CNSC and fully supports the McClean Lake Mill relicensing for a 12-year term.

Thank you.

THE CHAIRMAN: Thank you, Mr. Mooney.

I think we'll start a round of questions and we'll start with Mr. Tolgyesi.

MEMBER TOLGYESI: Thank you for your presentation.

I have a little bit technical question, I'm sorry. I'm going back to selenium.

Do you forecast your selenium content or do you have an idea how it will evolve with time; it will be maintained or it will decrease eventually, and do you have any control on the site which is mixing ore because maybe you have some spots of ore but where there is a slow selenium content?

I'm sorry, it's quite technical and I don't know to what extent...

MR. MOONEY: Liam Mooney, for the record.

And I'm sure on the milling side, AREVA has some perspective on that, but we do a great deal of

sampling in relation to the Cigar Lake ore body to understand the characteristics of the various parameters in there and then, work with AREVA in relation to what's expected in the life of the mine plan and what may be coming in the ore.

But as far as selenium we do look for controls on the mining side and look to ensure compliance with the applicable regulatory limits for our facility, as well as working with AREVA in relation to the ore that is the slurry, that is delivered to their mill for milling.

MR. HUFFMAN: Dale Huffman, for the record.

When we were looking at the graph yesterday, one of the biggest improvements to the whole selenium story was the improvement in our understanding of selenium in the ore sources that was provided by Cameco and helped shape that graph and that forecast into the future.

MEMBER TOLGYESI: And my last is, you are doing this Eastern Athabasca monitoring program, sampling berries and food. Is this valuable and there was a site where you could go, but should somebody just go there and see the results, or you are publishing them, so sending them to communities, and to what extent, how far you are sending them to communities?

MR. MOONEY: I don't want to speak -- sorry, it's Liam Mooney, for the record.

I don't want to speak out of turn because EARMP is a provincial program, we brought it as an example of community-based monitoring that's beyond the monitoring programs required of the licensees such as Cameco and AREVA, so that provincial representatives might have more to say on that, but the website is but one means of sharing not just the summary, but the data that's collected through the EARMP process and then, there is a budget in EARMP for communication in the communities, so the community visits.

And I think one of the real strengths of the program is that the sample collection is done by community members, so it follows what -- you know, if they were to shoot a moose or if they were to collect blueberries or to catch a fish, they then have a means to send a sample which is taken by CanNorth and taken to SRC for analysis.

So, it really is a program that's reflective of the communities' use of the land and the traditional resources on it.

THE CHAIRMAN: Mr. Seeley?

MEMBER SEELEY: Yes. I wanted to note that there is, in your presentation you talked about collaboration on the environmental initiatives, the EARMP program with AREVA and Cameco and, similarly, community engagement programs and the AJES program. So, very good

work on that together.

So, my question is, is there any such collaboration on safety-related programs, incidents, learnings, best in class, et cetera, between the two operations?

MR. MOONEY: Sure. It's Liam Mooney, for the record. I'll start and I'm sure AREVA will have something to add.

But we're both members of the Saskatchewan Mining Association and there's been concerted effort on the part of the Saskatchewan Mining Association to share use of experience in relation to events and learnings on safety performance overall.

I think there's that that has really taken off in the last couple of years, but also, because we're joint venture partners and we work quite closely together, there was a lot of informal sharing of knowledge and experience and, at the joint venture meeting for the Cigar Lake Operation, safety would be top of mind in the presentation to the joint venture partners that would include AREVA and there would be questions from the joint venture partners about, you know, both if there were any events or incidents of note, but also stronger performance and why that's the case and what you're doing in that regard.

So, I think that it's safe to say there's several levels of engagement in relation to safety and a lot of opportunities for learning between the two organizations. And we're improving in that regard as we go as well.

MR. HUFFMAN: Dale Huffman, for the record.

Within the Saskatchewan Mining Association, both companies are leaders in safety stewardship, so there's examples within the Saskatchewan Mining Association where we have a safety committee that gets together quite regularly and shares on events and shares on proactive activities to improve safety across the industry, not just uranium, but across the mining industry.

We also do things like share our information on any dangerous occurrence that may have happened at any of the mine sites, so we rapidly get that information out and share it across mine sites.

And in the last few years, we've been getting together for a safety summit in Saskatchewan that Mr. Mooney chaired just recently, a couple of months ago, where we bring all the companies together and share safety experiences and the things we're doing to improve safety.

MEMBER SEELEY: Maybe just for clarity, how often would that happen, the Saskatchewan Mining

Association collaboration? You talked about sharing events through that organization; how often would that happen per year?

MR. HUFFMAN: Dale Huffman, for the record.

The safety committee meets about once a month, so that's a group of our safety officers from site and they share information monthly.

When an event happens, we circulate those immediately and there might be across the industry perhaps a hundred events in a year, maybe 80 or a hundred events in a year.

And then the safety summit, we are organizing on a yearly basis.

MEMBER SEELEY: Thank you.

THE CHAIRMAN: Dr. Demeter?

MEMBER DEMETER: Thank you for the presentation.

I have a question that deals more with operation and multiple stakeholders. So, at one site Cameco will mine ore and then transport it to another licensee for milling. There's a transition there between your truck entering their zone relative to jurisdiction accountability, responsibility.

How do you deal with that; one company

providing transport to another company, in that transition if something happens you know, are there special memorandums of agreement, operational plans? How do you deal with that transition between the two agencies?

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

We've had a good deal of experience in that regard because we've been moving ore slurry between our McArthur River Operation and Key Lake since 1999, and McArthur River and Key Lake are distinct licensees under both the province and the federal regime, but they also have different ownership interests.

So, there's been a structure agreed to in that regard. Really on the transportation side, the fallback is compliance with the *Transportation and Dangerous Goods Act* requirements and ensuring that the slurry totes are IP2 certified and meet all the requirements in that regard.

So, the transportation is Cameco's to take it to the slurry ore load out -- say that three times as fast as you can -- at McClean Lake and they take it from there and there's a good deal of discussion between the two facilities about potential on improving transportation between facilities.

MR. HUFFMAN: Dale Huffman, for the

record. There's also been a long-standing mutual aid agreement, so if there's ever an emergency of any sort at mine sites in northern Saskatchewan. We have arrangements to lend assistance, so that can be applied to an emergency at the facility or in transport between facilities.

THE CHAIRMAN: Dr. Soliman?

MEMBER SOLIMAN: Thank you. I would like to know the picture shown in page 2 in your presentation, H9.7A, what is that and what is the background of that picture represent? The first -- it is in page 2.

MR. MOONEY: It's Liam Mooney, for the record. That's a shot underground at the Cigar Lake Operation and it looks like it's one of the freeze tunnels or -- yeah, it looks like it's one of the freeze tunnels at the Cigar Lake Operation.

MEMBER SOLIMAN: What is the picture in background? What is the images in the background represent?

MR. MOONEY: There's a miner standing facing us with a headlamp. That's the light that you see sort of in the dead centre of the picture. And then behind them, it's probably one of the drilling units behind him.

MEMBER SOLIMAN: Okay. My second question is, I would like if you have -- you are supporting the 12-year licence term. Do you have any justification from

point of view of safety, environment, health, security, to support the 12-year licence?

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

We've been pretty staunch in our support of longer licence terms in relation to facilities. The rationale there, typically we look at from a number of different aspects, one of which is these facilities are well regulated throughout their lifespan, so it doesn't just turn on the re-licensing. There are project officers from the CNSC and from the Saskatchewan Ministry of Environment and Saskatchewan Labour Relations and Workplace Safety who come up to our operations on a regular basis.

We've been pushing for longer licence terms because we do the environmental assessment for the life of the facility and the life of the facility isn't five or 10 years, typically in a mining context it's quite a bit longer than that.

So between the -- with that as a rationale, we also have very strong performance on both the environmental and safety front. So we think that that more than justifies a longer licence term.

I understand AREVA has some specific logic around why 12 years would make sense. We would be in the next licensing term in relation to our facilities asking

for longer licence terms as well. And the Cigar Lake one, for example, we received an eight-year licence term last time, but we would be asking for at least a 10-year licence term in the upcoming time frame.

The last piece I would add, and this is one of the things that you probably would feel from the discussion yesterday, is that relicensing brings a lot of confusion to the discussion around the facilities and what has been approved in the past and the effects and how they're being regulated. So we don't want that confusion in relation to our operations. We think the strong safety and environmental performance warrants longer licence terms, and we believe that the trend in that regard is a positive one and lends itself to clear communications with our affected stakeholders.

THE CHAIRMAN: Thank you.

Mr. Tolgyesi?

MEMBER TOLGYESI: You were talking about Saskatchewan Mining Association. I suppose you use it as a kind of info-sharing hub between the mines. Is it limited to health and safety, or it covers other subjects? And how do you exchange?

MR. HUFFMAN: Dale Huffman for the record.

There is a collection of committees within the Saskatchewan Mining Association. We've been speaking

about the Safety Committee. There's also an Environmental Committee, a Training Committee, and a Human Resources Committee. There's a collection of activities that we share on across the industry.

Perhaps Tammy Van Lambalgen would like to comment, as she's part of the executive of the SMA.

MS VAN LAMBALGEN: Tammy Van Lambalgen for the record.

Dale kind of stole my answer. I'm vice-chair of the SMA, Saskatchewan Mining Association, and there is a broad spectrum of committees that work in different aspects of mining -- safety, environment, as Dale said. We also have a diversity inclusion area that we work on, and we work for representative work forces, such as Women in Mining. So it's a really well-run organization. And I won't take credit for that; it's our executive director -- oh, no, President Pam Schwann that does that. But there are many facets of the organization.

MEMBER TOLGYESI: Do you have any ways if one of sites is doing poorly, I mean you'd like to improve because it reflects on the whole industry. So do you have any ways or means to force one of the members to improve, to correct methods or ...

MS VAN LAMBALGEN: Tammy Van Lambalgen for the record.

Our bylaws do allow to be evicted from the Saskatchewan Mining Association, which has never happened as I'm aware of. But I think it's mostly just the collaborative work to support each other in mining, to improve our performance overall, sharing of knowledge, and working together really is the main focus.

THE CHAIRMAN: Mr. Seeley? Dr. Demeter?
Dr. Soliman?

So Mr. Mooney, last comments.

MR. MOONEY: I just wanted to close by thanking you for taking the time to review all the materials. I know it's a challenging task, and I appreciate the questions and the opportunity to respond and present to you here today.

THE CHAIRMAN: Thank you.

So we will move to the next submissions. This is an oral presentation by the Kineepik Métis Local Inc. No. 9. It is outlined in CMD 17-H9.3. And I will turn the floor to Mr. Vince Natomagan for this presentation.

Mr. Natomagan.

CMD 17-H9.3

Presentation by Kineepik Métis Local Inc. (#9)

MR. NATOMAGAN: Good morning. Good morning, Marc. I'm missing Mr. Binder today.

MR. LEBLANC: As was indicated yesterday, he's also disappointed he's not here.

MR. NATOMAGAN: Good morning, ladies and gentlemen, and good morning to you, Mr. and Madam Commissioners.

For the record, my name is Vince Natomagan, executive director for Kineepik Métis Local and originally from Pinehouse.

Our rights-bearing community is represented by Kineepik Métis Local No. 9 and the northern village of Pinehouse. These organizations with the responsibility of protecting our inherent Aboriginal rights throughout our extensive traditional territory while at the same time providing opportunities for business development and job creation for the residents of Pinehouse.

In 2012, Pinehouse entered into a collaboration agreement with AREVA and Cameco with the intent of enhancing Pinehouse's participation in all aspects of the uranium industry. The Pinehouse-Cameco-AREVA Collaboration Agreement has played a

pivotal role in supporting and enhancing the vision and mission statement of Pinehouse. The four pillars of community investment, workforce development, business development, and community engagement and environmental stewardship have been interwoven into the fabric of Pinehouse's vision and mission statement.

Pinehouse's vision is to move away from the welfare mentality and into self-recovery, self-reliance, and independence as a Métis community. It is the hard work of Pinehouse leadership that continues to realize these incremental yet significant successes.

The uranium production-based Community Trust has contributed directly to new infrastructure, renovations to buildings, and social programming. To date, over \$4 million in proceeds from the Community Trust has been disbursed to the locally community-owned organizations that make up Pinehouse's Reclaiming Our Community (ROC) committee. Newly constructed projects include the hockey arena with artificial ice and Judille's Place, a seniors' housing complex that consists of six one-bedroom units and six two-bedroom units. Elders are now in the process of moving into these residences.

Pinehouse's youth have benefitted tremendously from the various education and training programs that have been offered as a result of our

participation in the uranium mining industry. From personal development to essential skills to construction craft labour development and trades-based apprenticeships, these young people are gaining valuable skills and training that will allow them to eventually obtain journeyman status in a wide variety of trades. About 30 youth are moving into their third year of apprenticeship classes while several more are preparing to write their journeyman exams.

By providing these youth with opportunities to work alongside experienced journeymen on projects, such as the hockey arena and Judille's Place, these youth have been able to hone their skills and become better prepared for the academic component of their training programs. As we speak, seven of Pinehouse's apprentices are helping build a three-bedroom home in Prince Albert. This is a partnership between Pinehouse, Sask Polytechnic, and Habitat for Humanity. A family in need will be moving into this new home sometime this summer.

Our community's economic arm, Pinehouse Business North, has been a critical component in the continuing progression of skills development and improvements in the standard of living for Pinehouse's citizens. In addition to being a conduit for education and training, PBN also provides most of the youth with

employment opportunities upon completion of their training programs. The opportunities generated by PBN and the hard work of our community leaders are at the heart of our community's empowerment.

The successful business relationship between PBN and AREVA is an important reminder of what communities and corporations can achieve if they reciprocate the collaboration. With help from a network of skilled business professionals, PBN has become a preferred northern contractor for the uranium mining industry and government as well.

With roughly \$12 million in equipment assets, PBN can deliver projects on time and on budget. We now have project managers, engineers, superintendents, accountants, and other professionals working at our corporate office in Saskatoon and the head office in Pinehouse. As we sit here today, PBN is working on expanding a community lagoon project at Sucker River, a Lac La Ronge treaty community a few kilometres north of here. Local employment is supported by PBN at this project.

Our active participation with AREVA has enhanced the meaning of community engagement and environmental stewardship. Pinehouse community members are now increasingly educated and knowledgeable about the benefits of the uranium industry. Local community members

such as myself have been tasked on having appropriate regulatory and operational conversations with the uranium mining industry in order to understand how these operations may or may not affect the environment and to report back to Pinehouse community members through public meetings, social media, and community radio in the English and Cree languages.

To further this engagement and understanding, the community has engaged the services of professional researchers, such as the Northern Research Group of Prince Albert, to conduct third party reviews of the information being presented and to ensure that all community members have the opportunity to fully understand the technical language used in environmental reports. These external third party reviews have consistently shown that AREVA and the CNSC have expended an immense amount of effort to both monitor and explain the effects of uranium mining development such as the McClean Lake project.

The third party review and engagement process for this project has allowed us to meaningfully engage our residents and to have their input brought forward in the licensing process.

As we move forward, we are confident that AREVA will continue to diligently monitor the McClean Lake site. Hopefully, we can continue to explore new ways to

partner with AREVA to enhance environmental stewardship on projects occurring across the northern region.

In closing, Pinehouse has chosen to move away from the welfare mentality and into independence and self-reliance. Being a Métis community with zero government transfers, Pinehouse has chosen to foster collaborative relationships with the uranium mining industry, that includes AREVA.

This collaboration has had a profound positive effect on the Métis community of Pinehouse. Given this collaboration, the third-party review and the expressed support by community members, the Métis community of Pinehouse hereby gives full support to AREVA's 12-year licence request for the McClean Lake mining operation.

Thank you.

THE CHAIRMAN: Thank you very much.

Before we go into the round of questions, I'd just like to ask one question related to the introduction to the review in your submission.

You note that seven of the 23 references were requested from AREVA in late-March, only one was received. So I guess two questions: why was only one received; and, to what extent did you not receiving those other six affect your ability to fully review the submission?

MR. NATOMAGAN: As noted yesterday in one of the presentations on the Q&A section, that sometimes these hearings are very cumbersome in terms of reviewing technical documents. We did try -- Matt, who is the principal owner of NRG Inc. out of Prince Albert -- to engage the proponent to provide us information as quickly as possible, but we had to be mindful that the technical documents had to be written in such a way that they were finalized.

I tried to coax some of the AREVA staff in Saskatoon to send me the information, even in draft form, and they couldn't.

So to answer your question appropriately, I think AREVA, and Cameco for that matter, is a foregone conclusion in Northern Saskatchewan. Believe me, I've studied these documents. I bug a lot of your CNSC staff, so are the proponents, on a yearly basis for their yearly annual reports. So, generally speaking, it has not really affected how do we take the stance today technically. Because by virtue of the yearly review of the annual reports by each proponent we are very much abreast to the activity.

So you could say it hampers our ability to give a thorough feedback for today, but it really doesn't because Matt and I closely work together. So to answer you

by virtue of all the previous year reviews, we are informed and that's why the community expressly gave support to this licence.

THE CHAIRMAN: Thank you. AREVA.

MR. HUFFMAN: Dale Huffman, with AREVA.

I'll apologize if Mr. Natomagan wasn't able to have access to the specific documents that he wished, and I'm certain that we've moved to correct that. I think with this licence hearing we have given unprecedented ease of access to our collection of documents and perhaps we're also talking about documents that perhaps we were in the process of writing for the CMD at the time.

But I'm pleased to hear that Mr. Natomagan and his group were able to review information and are happy with the outcome.

THE CHAIRMAN: Thank you. Dr. Demeter.

MEMBER DEMETER: Thank you for your presentation. I'm impressed with your community's engagement and initiative with this industry and more broadly.

MR. NATOMAGAN: Thank you.

MEMBER DEMETER: The question I have, is you have a lot of your community that are engaged with this industry. Is there any kind of mechanism that you have for an organized feedback onto their sense of the safety

culture and workplace hazards.

Is there some kind of feedback that you could get and, if so, what sort of is a summary of that?

MR. NATOMAGAN: That's a good question and it's a multi-faceted answer in this regard. Cameco goes out of their way because, by virtue of our collaboration, to have upwards of four to six GIC meetings with senior leadership of Pinehouse and senior leadership of Cameco. At the same time, we meet with AREVA as well.

On the environmental side, I'm the primary lead on community engagement and environmental stewardship, so I read a lot of technical documents. I have the opportunity to pick up the phone and talk to this particular proponent anytime I feel like it or, if I'm not satisfied on behalf of the community -- believe me, there have been times I was not satisfied and I'd go to the CNSC.

I really don't care if I piss off the proponent or not, I don't represent them, I represent the Aboriginal community of Pinehouse. As such, if I feel that my environmental questions have not been deemed appropriately answered, I go to CNSC Staff. CNSC Staff is very very helpful, they'll send me too much information sometimes, and we have the Northern tours every November, so every community member can ask questions.

By the way, those environmental meetings I

have with the proponent about four to six times a year, I make sure they're posted all over the community and on social media, and I talk about them on our local radio station. So there's no excuse for my particular community for anybody to say I'm not informed. They should be informed and, if not, I'm not doing my job effectively.

MEMBER DEMETER: Thank you. I was particularly interested if people in your community who work in this industry have a mechanism to feed back to you or your community about workplace conditions?

MR. NATOMAGAN: I suppose they could. But I think each mining operation has their occupational health and safety committees, and it's an open dialogue, it's an open process. Both AREVA and Cameco encourage employees to come out, and if there's something that's of a safety problem, employees are always welcome to give feedback to their superiors, and there should be no punishing of any employee.

So there's no direct mechanism between myself as the lead on the fourth pillar. But if there's a community member that comes to my office and says, Vince, I was mistreated or I saw something not being roped off at this particular operation, I will phone up the proponent and ask why.

MEMBER DEMETER: Thank you.

MR. NATOMAGAN: Thank you.

THE CHAIRMAN: Dr. Soliman.

MEMBER SOLIMAN: Thank you. I'm very happy really to see that your community is having all the benefit from the collaboration agreement, and your presentation is very well written, perfectly understood all the aspects. So you explain it very well.

However, in page 13, conclusion, you have some concern about the difficulty of the abbreviations or the finishing of the terms on the documentation. So what is your recommendation in that area?

MR. NATOMAGAN: The proponent, Matt Vermette of NRG Inc., wrote this particular document, and it was endorsed by the community generally.

Believe me, sometimes I run into battles in the English language with either proponent. Sometimes I just tell them to cut through all the bullshit and tell it like it is. Minimal or negligent or just below regulatory or just before the administrative levels. I just tell them, can you just tell me, in all confidence, what the heck are you trying to say so I can give assurance back to my community that you are protecting the environment?

Yes, I agree with you in what you're trying to ask. Sometimes the English language has a lot of ways to say something. But in my particular language, in

Cree, when I translate back, you can't play with the language. Just straight up, one way. This is why sometimes I get into a heated verbal communication strategy for the proponents.

But they know me well, I've known these guys for about 15 years, so they know me and they know not to play. Because if they try and dance around, I think I'll side step and try and get the answer quickly. As I said, I represent an Aboriginal community, not them.

THE CHAIRMAN: So a word like minimal doesn't easily translate back into Cree?

MR. NATOMAGAN: No, it doesn't.

THE CHAIRMAN: So --

MR. NATOMAGAN: There's a lot of words that don't translate. So you have to have something called in linguistics a dynamic equivalence.

THE CHAIRMAN: Mr. Seeley.

MEMBER SEELEY: Thank you for your presentation. I would note that an impressive story on capacity building in your community, and I know a collaboration agreement is an important component. But much of this is to be -- it is about community leadership and so I commend you and other leaders in the community of Pinehouse for the work that's been done to make this happen.

A couple of specific questions. You referenced the uranium induced infrastructure trust. So this is an important I guess funding component of some of the things that have happened in the community, whether it's through revenues from your business or other commitments from either AREVA, Cameco, the provincial government. Just curious how the trust was funded?

MR. NATOMAGAN: The trust is -- it's spelled out in our collaboration agreement. By the way, our collaboration agreement is on our website, it's public for the world to see. By the way, that's the only collaboration agreement that's public. Everything else is confidence with the other collaboration agreements. It could be found on pinehouselake.com.

To answer you, it's spelled out -- I forgot if it's below -- the collective production of AREVA and Cameco, if it's below 25 million pounds, and then X amount of dollars gets delivered to the community trust.

For instance, next week here for 2016 calendar we will get a tranche of \$303,000 into the trust next week. We have five caring community volunteers that will allocate that money against a set criteria. We signed with RBC, Cameco, AREVA, and Pinehouse, ourselves, on June 13 on a trust agreement. But that was the second tranche.

The first tranche was \$268,000 back in

January. You bet you every cent is very important to us.

As I said, I can't stress enough the big statement that I made; Métis communities are not looked after by any level of government. We've been a political football, as you probably are aware, for so long, zero government transfers. It's hard to do something when you're a dollar short and a day late.

So what do you do? Do you look out the window and blame everybody else for your problems or just look in the mirror and say, I have these hands and will work. Thank goodness to the strong leadership of our Mayor Mike Natomagan. If it wasn't for him directing this ship by virtue of this Collaboration Agreement, I wouldn't be sitting here today glowing about our successes in the community.

And the Community Trust has been able to leverage us training dollars: GDI, Can-Sask. Governments and educational institutions will not come North until you have skin in the game. That Community Trust has been pivotal moneys for us to put skin in the game as a Métis community. If it wasn't for that, we would have none of this. So the Collaboration Agreement is in fact very, very important to us and we don't apologize for that.

MEMBER SEELEY: Okay, thank you for that. Maybe just one other question with respect to the Pinehouse

Business North. It sounded to me like you had been successful in training and winning contracts with the industry and had a workforce as high as 160 personnel in 2016. It tapered off a little in 2017 by the sounds of it. It goes with the level of activity.

MR. NATOMAGAN: Yes.

MEMBER SEELEY: I guess my question is, do you have any evergreen or longer-term maintenance contracts with some of the -- with Cameco, AREVA, the uranium industry as well to give the steady diet of work coming into the company?

MR. NATOMAGAN: It's through robust engagement from leadership to these two proponents that we have been able to sustain work. And to answer you, we are right in the middle of trying to nail down evergreen opportunities. We are still relatively new. As a matter of fact, on May 17th, just last month, we celebrated our 10-year anniversary of Pinehouse Business North and we are very proud to have come this far.

MEMBER SEELEY: Yes.

MR. NATOMAGAN: Basically we are getting ready -- I'm getting off topic here, but we are basically getting ready for the price of uranium to jump up. We have a heck of a lot of work coming, namely, to develop the McClean Lake -- the Millennium Project, which is not what

you are asking. But to answer you appropriately, we are right in the middle of negotiating for an evergreen contract, probably with Cameco first and then we will come knocking on AREVA's door very soon.

MEMBER SEELEY: Thank you for that.

MR. NATOMAGAN: Thank you. And Vincent knows that.

THE CHAIRMAN: Mr. Tolgyesi...?

MEMBER TOLGYESI: Just to follow that, could you give us some expectations and some hints on the Millennium Project?

MR. NATOMAGAN: Excuse me? Say it again.

--- Laughter / Rires

MR. NATOMAGAN: Say it again, please?

MEMBER TOLGYESI: No, no, no.

MR. NATOMAGAN: You're going to have to ask me, yes. I love these kinds of questions, sir.

--- Laughter / Rires

MEMBER TOLGYESI: No, because you were the first one who was mentioning Millennium Project, so we said, gee, maybe we will have some news.

MR. NATOMAGAN: I follow China and India very close.

MEMBER TOLGYESI: My question is about -- on page 12 there's a question about environmental accident

insurance. It specifies that AREVA's environmental accident insurance is \$10 million for environmental hazards and \$75 million to cover incidents involving suppliers or transporters of nuclear products. First AREVA and after staff, are you comfortable with these limits? Are they sufficient or should they be revised periodically?

MR. HUFFMAN: Dale Huffman with AREVA. I think you're referring to our CMD or the staff CMD?

MEMBER TOLGYESI: No. This is in a CMD presented by the intervenor, page 12, just the paragraph about human health and safety.

MR. HUFFMAN: Oh, okay. Thank you. Dale Huffman with AREVA.

Yes, we are comfortable with the amount of insurance that we carry for these sorts of hazards.

MEMBER TOLGYESI: You know what activities are coming, selenium is higher, movement of the piles to Sue C and A pit. There is no higher risk that eventually should be reflected in insurance?

MR. HUFFMAN: Dale Huffman with AREVA.

We are managing these risks during the operating period. We don't expect that the selenium risks will really come to fruition such that we would have to exercise environmental accident insurance. So we are comfortable with the amount we are carrying.

MR. LOJK: Good morning. Bob Lojk for the record.

AREVA has a financial guarantee. We consider the business insurance a business question and then as far as the staff is concerned, if something were to happen, they would have to clean up whatever the cost to their own business would be. It's a large enough company. And then if in fact the company would not be able to support that, the financial guarantee would come into play. I mean the moment that they shut down they would have to clean up, start decommissioning and cleaning up any of the problems that they have. So if they choose to reduce their corporate risk by buying insurance more or less that's a decision, but in terms of protecting the environment it's our role and we can call on the financial guarantee in order to do that. And the Province of Saskatchewan unfortunately is not available right now but would also comment on that.

THE CHAIRMAN: Dr. Demeter...?

Dr. Soliman...?

Mr. Seeley...?

So I just have one more question, it's on the last page of your submission. You start the paragraph by saying:

"While few of the participants

identified impacts to traditional land use activities, [some people] had concerns related to environmental effects..."

Were those concerns expressed as a major issue or it would be nice to -- is there anything there that needs addressing that the Commission needs to be aware of to monitor going forward or do you feel that a lot of those questions are actually answered through the processes that you have described?

MR. NATOMAGAN: I think the answers have been answered appropriately. The person that might not be doing the job of disseminating the information as thorough as possible in a community of 1,400 is me. I am the lead on this one. At the end of the day and at the beginning of the day I take the heat on anything if I'm not doing my job not only putting their feet to the fire but also making sure the community questions are answered appropriately. So I'm going to take that one. I'm going to have to go back and evaluate how I disseminate a lot of information. And I'm trying very hard to get a lot of the young people. Like for instance my colleague back over there, her name is Amy, I'm kind of molding her to be the next me, so to speak here, the next time she's here because the next go-round here in about six years' time, I don't want to be here, I

have done this quite a few times. So it's for the next generation to pick up the torch now. I'm getting a little old. So it's on me that statements like this are made.

THE CHAIRMAN: So I mean you've obviously got a really good network within the community, you've obviously got a good way of getting feedback and understanding the pulse of the community. So this is something that you got as fixable and something that you can resolve?

MR. NATOMAGAN: Absolutely it's fixable by Pinehouse leadership and myself, yes.

THE CHAIRMAN: Thank you.

Any other?

So, Mr. Natomagan, your word is last.

MR. NATOMAGAN: Thank you very much.

Three things.

In my opinion -- it's only my opinion -- I would encourage other northern communities that are intervenors to do their homework like we have. It's easy to come sit here and make some political statements, but it's harder to do the homework and give substance to why it is you're making those statements.

Number two, I give full credit to the CNSC staff for doing their job. They are above reproach. They have integrity and I can say that with all honesty. And

you guys, it's kind of difficult, as I said in the last hearing here about four years ago, it's kind of difficult because we are all in the crosshairs of a lot of the general public due to misunderstandings.

And last but not least I would like to quote a couple from Chief Louis from Oasis that doesn't sit on his hands, he just gets up. The two things are it's the economic cart that drives -- it's the economic cart that drives the social cart. And the last one is you lose your language and culture faster in poverty than in economic development. And on that I rest my case, as they say.

THE CHAIRMAN: Thank you very much.

CMD 17-H9.2/17-H9.2A

Oral presentation by David Parker

THE CHAIRMAN: So the next submission is an oral presentation by Mr. David Parker -- Dr. David Parker. It is outlined in CMDs 17-H9.2 and 17-H9.2A.

Dr. Parker, the floor is yours.

MR. PARKER: Not Dr. David Parker but David Parker, for the record, but thank you for allowing me to be here today.

So I am going to be presenting on the results of the study that I conducted as part of a Master's

of Science project in engineering at the University of Saskatchewan looking at greenhouse gas emissions from uranium mining and milling in Saskatchewan. Now, I focused on multiple sites in Northern Saskatchewan and I will talk about all of them, but for this presentation I'm going to place a little bit of additional focus on McClean Lake as well.

So this study was completed from 2013 to 2016 and the purpose of it was to better understand the lifecycle of greenhouse gas emissions from uranium mining and milling in Saskatchewan in particular, but by extension Canada since nearly all of Canada's uranium comes from Northern Saskatchewan.

I included three mine/mill pairs. The first was McArthur River and Key Lake operations and the study period I considered was 2006 to 2013. I considered the same study period for Rabbit Lake operation. And then I also looked at McClean Lake operation from 1995 to 2010 and that period of time represents the beginning of the mine being developed all the way until the end of the time period where it was using ore from the onsite or nearby open pits.

I present this as value-added information relevant to the mandate of the CNSC and the operation of McClean Lake and obviously by extension Cigar Lake

facilities.

So by way of background, this audience is no doubt aware that climate change is both real and man-made, and a major contributor is the electricity sector, primarily from the combustion of coal, oil and natural gas. Coal emits about 1,000 grams of CO₂ per kilowatt hour of electricity produced, natural gas does a little bit better at 500, but both are very high.

Now, our challenge is to transition to a world economy fuelled by low carbon sources of electricity such as hydro, nuclear, wind, solar, geothermal, et cetera. These typically have emissions closer to 50 grams of CO₂ per kilowatt hour of electricity produced and even lower.

Now, from a greenhouse gas perspective, nuclear is very emissions-competitive with renewables, but there is a lot of variation in what the actual number is when you look at the different nuclear lifecycle studies that have been conducted. Moreover, there is very little quality information available in the scientific literature that actually considers uranium mining and milling specifically and almost a complete absence of data for uranium mining and milling in Saskatchewan. So the goal of my study was to benchmark lifecycle greenhouse gas emissions per kilogram of yellowcake from uranium mining and milling operations in Saskatchewan.

Now, as you are no doubt aware, Saskatchewan is home to some of the highest grade ore in the world and we expected at the onset of this study that that would translate into fairly low emissions per unit of production compared to other facilities from around the world.

Now, with fossil-fuel-based electricity most of the greenhouse gas emissions come from the combustion of the fuel. For simplicity sake, the non-combustion emissions are often ignored, but if you apply this approach to non-fossil electricity technologies it leads to the erroneous conclusion that electricity from nuclear or renewables is emissions-free, which is not the case. While emissions from nuclear renewables are low in comparison to fossil-fuel-based technologies, they are clearly not zero. So to properly account for the emissions from these sources, a lifecycle approach is necessary.

Lifecycle analysis considers all of the material and energy flows into and out of the product system studies to assess emissions from all lifecycle phases, and in the case of these mines and mills this includes construction, operation and decommissioning and a number of categories of emissions.

So first, we have direct emissions. So if you think about propane being consumed in industrial

boilers, when it burns, it releases carbon dioxide and other greenhouse gases directly into the atmosphere, direct emissions.

We have energy indirect emissions. So these facilities are purchasing power from SaskPower. They operate various coal and natural gas and other power plants which release emissions into the air on behalf of but not directly by the mining companies.

Then we have other indirect emissions, which covers everything else. It's the most challenging category because it is so broad. This includes everything from flying employees to and from sites, from moving materials to and from sites and all of the emissions actually embodied in the materials themselves. So if you think of every steel beam that's used in a mill for example, that material had to be extracted, processed, transported and then put together where it ends up in the mill. And all of those lifecycle phases have emissions associated with them which are now embodied in that material.

So I will jump right into the results.

This figure shows the results for the three Saskatchewan mine/mill pairs as well as the production-weighted average over the study period and it effectively represents all recent yellowcake production in

Saskatchewan up until the end of the study period.

In Saskatchewan we mill ore grades ranging from .7 to 4.5 percent U308 at the mill. This is compared to a world average of between .1 and .2 percent U308. So even the mill that I looked at with the lowest ore grade had considerably higher ore grades than the world average.

The emissions ranged from 34 all the way up to 81 kilograms of CO₂ per kilogram of U308 produced. And we did see the trend that as ore grades increased, the emissions did decrease, which was the expected result. You expect that with higher ore grades there is less amount of effort to come up with the same level of production, so we expected a drop in emissions.

Now, for McClean Lake operation in particular, it was shown to have a greenhouse gas emission intensity of 64 kilograms of CO₂ per kilogram of U308 during the 1995 to 2010 study period when it was sourcing ore from open pits at or near the mill. Over 65 percent of this came from energy consumption led by electricity; 14 percent came from the consumption of reagents mainly during the milling process; 10 percent of the emissions came from the use of explosives that are used in the open pit mining. And then there are other categories considered like construction, infrastructure, transport and a whole range of other processes.

Now, the slide is not showing it properly, but there's actually two results being presented on the slide for each facility. So the top one assumes that the electricity by each facility comes directly from SaskPower using the average provincial electricity mix by that company, and that is dominated by coal and natural gas. So emissions from electricity in Saskatchewan actually are fairly high compared to other places in the country.

Now, this was chosen as the default scenario because SaskPower doesn't differentiate their emissions by region, but if you look at their transmission map you will see that Northern Saskatchewan is actually powered exclusively by hydropower, which has significantly lower emissions per unit of electricity. So if we assume that these facilities are powered by that hydropower, you see a dramatic reduction in the emissions estimate. So that's when you get the lower number.

This figure shows the same results and compares this study to other studies for uranium around the world. I apologize that it's not showing properly on the screen there.

Now, here we are talking different units. We are not talking about emissions per unit of production but we are talking about emissions per unit of electricity that this uranium represents.

So Saskatchewan uranium contributes approximately 1.1 grams of CO₂ per kilowatt hour of electricity produced when it's used in light water reactors. In Canada we use heavy water reactors and in this case the emissions are .9 grams of CO₂ per kilowatt hour due to the improved uranium economy in heavy water reactors.

Also, I just want to emphasize that this 1.1 or .9 number, that's just the mining and milling phase, it doesn't take into account the rest of the nuclear fuel cycle at this point.

So the other studies that I have included on this slide have widely divergent results ranging from a low of .05 all the way to a high of 25 grams of CO₂ per kilowatt hour. That's a factor of 500 difference between the lowest and the highest estimate. So you can see there is a huge variation in the literature as to what the number is for other facilities but, as hypothesized, you do see that emissions from Saskatchewan uranium do come out quite low compared to the results of these other studies.

I would like to also note that after reviewing all of these other studies in some detail I have realized that very few of them have been conducted with the same level of rigour as the one I conducted. Many are based on estimates or extrapolations, pulling in data from

non-uranium mining industries or excluding categories altogether. So to make direct comparisons is a little bit complicated by that.

For additional context I would like to note that coal mining itself releases about 9 grams of CO₂ per kilowatt hour of electricity produced. This is nine times the emissions from uranium mining and milling just for extracting the resource. So clearly, for the same amount of electricity produced, mining and milling of uranium is a very low greenhouse gas means of extracting an energy resource.

But things have changed quite a bit since this study was conducted.

In 2014 the Cigar Lake operation began producing high grade uranium ore and the McClean Lake mill was restarted after an upgrade enabling it to process that high grade ore.

In 2016 the McClean Lake mill produced over 6 1/2 million kilograms of uranium at an average throughput ore grade of 18.1 percent uranium with a 99.1 percent rate of recovery. This is significantly higher than its previous peak production of about 2 1/2 million kilograms of uranium and a previous peak ore grade of 2.9 percent.

I was very interested to know how this

change in production was going to influence the overall emissions per unit of production, so I updated the model based on the 2016 data such as energy and range in consumption. I updated most of the parameters that have the most influence on the result and I got the following results.

So my Mill B is McClean Lake. It went from 64 down to 36 kilograms of CO2 per kilogram of U308, directly relating to that huge jump in ore grade that it's processing. So it fell in line with expectations that the emission intensity would drop substantially.

This also impacted the production-weighted average of emissions from uranium production in Saskatchewan as a whole. So overall it's now contributing quite a large share.

And there have been other production changes in Saskatchewan that were reflected in that 2016 number, but the decrease from 42 to 35 is largely as a result of the changes to operations at McClean Lake.

The results here come with a few caveats.

First, I only had one year of data to play with since it just started operation. So the number could shift slightly with more data, but I wouldn't expect that the overall conclusions would be any different.

The second caveat is that the mill is not

now operating at its full capacity so that if it does continue to increase its level of production I would expect that the number may drop even more as additional economies of scale are achieved.

Finally, I would just like to summarize by saying that this study I conducted provides the only recent and rigorous estimate of lifecycle greenhouse gas emissions from mining and milling operations in Saskatchewan. The result was an average of 42 kilograms of CO₂ release per unit of production kilogram U3O₈, which translates to about 1.1 grams of CO₂ per kilowatt hour of electricity produced considering that original study period. These results are very low compared to lifecycle greenhouse gas emissions for other areas around the world.

And finally, the production-weighted average ore grade today is significantly higher -- sorry a typo on the slide -- than during the study period. So the original results may overestimate the true lifecycle greenhouse gas emission intensity.

That concludes my presentation.

THE CHAIRMAN: Thank you, Mr. Parker.

Mr. Seeley...?

MEMBER SEELEY: Yes. Thank you for that.

I think maybe to start, the information shows that the lifecycle greenhouse gas emissions of

nuclear power are very low relative to other energy sources in the world and in Canada and therefore an important tool in achieving global GHG reductions and Canadian GHG goals recently stated in Paris.

Maybe as we dig a little deeper then into the analysis, the mining component is also shown to be world-leading in terms of using the technology and the grades of ore that we have here, so clearly also establishing Canada in the lead in terms of its emission footprint relative to producing uranium fuel or uranium products.

And then we go -- one level deeper then would be just simply -- you have described the McClean Lake operation moving from 64 kilograms in its previous alignment to something around 36 in its present state and of course this can be achieved through the technology improvements of the mill and the grade of the ore, et cetera.

The study doesn't address absolute emissions for the facility, so it would be another -- maybe this is just a point that I think having absolute emissions for the facility is also a good reference point because as we move along in Canada's goal to reduce its own emissions we will have to account for all emissions. Even though the nuclear power is a good story, the uranium mines do produce

greenhouse gases and we need to account for those. The relative footprint of the facility, even though the intensity has gone down significantly, is still higher. So we go absolute from -- because the production numbers go way up from 8 million pounds to 24 million pounds, the absolute emissions still go up for the facility.

So I didn't see those numbers anywhere in either the staff report EA or Mr. Parker's presentation but I think it would be useful information to have because I think as we go forward, yes, we will need to have that information.

And I think that was really it.

Maybe a question to staff. Do we have the relative greenhouse gas information for the facility based on the new -- it might have been in your last EA report maybe, is where I missed it.

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

So yes, this is an area where the CNSC does know that there needs to be work done and we are very interested with regards to all the factors that are involved.

I will pass back the specific details of where we are in our work to our environmental protection group to answer your question.

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

To get to your first point, when we look at AREVA's submissions, one of the things we are looking at is are they in compliance with federal and provincial greenhouse gas emission reporting requirements. So in the case federally and in the *Canadian Environmental Protection Act* you have the National Pollutant Release Inventory. In that, they have a greenhouse gas emission aspect of 50 kilotonnes of carbon dioxide equivalents for reporting threshold requirements. AREVA is around 30 times orders of magnitude below the need for reporting.

Further, in their environmental risk assessment they do look at greenhouse gases from a risk assessment perspective, looking at those produced from diesel and propane, but again, they are very minimal and, as we have observed, very low greenhouse gas contributors.

MEMBER SEELEY: Okay. Maybe I had misinterpreted something from Mr. Parker's presentation. We are at 36 kilograms of CO₂ per kilogram of production and the production now being 24 million pounds. I had something more in the order of 300,000 tonnes.

MR. HUFFMAN: Dale Huffman for the record.
Our production in 2016 was about 6.7 or 6,700 tonnes of uranium. Our greenhouse gas production was

about 30,000 tonnes of CO2 equivalent. It's a little bit hard to deconvolute or make the comparison between the period in 2016 where the McClean Lake site is only milling compared to what we reported in 2009 where we were mining and milling. We could deconvolute that. I don't have those numbers available immediately, but we are sitting at right now about 30,000 tonnes CO2 equivalent.

MEMBER SEELEY: Thank you.

MR. PARKER: David Parker for the record. I hope I can bring a little more clarity to this.

I want to point out that the number that I came up with, it includes two facilities, so it includes Cigar Lake and McClean Lake.

Second, it also takes a lifecycle perspective. So not only does it include the direct emissions which occur annually from propane, diesel, et cetera, it also includes everything that went into the construction, everything that's embodied in the reagents. So you would expect that that number would be larger than the annual emissions from that single facility.

MR. RINKER: Mike Rinker.

I would just like to add that the emissions of carbon dioxide from a facility like this are very low, they are below the reporting threshold, but we do take the point that for inter-comparisons for what is the

threshold for safety, it's good to know what the number is, but just as a measure that they are below the reporting threshold is really an indication that there isn't an environmental risk which would be an impediment to licensing.

THE CHAIRMAN: Mr. Tolgyesi...?

MEMBER TOLGYESI: I find it quite interesting that there is something which is new and we didn't do anything in this field about the mining industry as such. I have a few questions.

You are talking about median value, okay, and after you are talking about weighted average values and average also. Why do you use median value? How will it reflect if instead of median value we would use weighted average or average? Will it have any impact? Because when you look at your limits, say in Picture 4, Mine-Mill A, and you have the values from such to -- you know, like median value of 12 is ranging from 4 to 110, which is quite a variation and 12 is the much more lower side, which means that half the median is half below that value, half above. That means that the half, they are very consistent, but you know the valuation. So should we use median value or should we use something else?

MR. PARKER: David Parker for the record.

Okay, when the study refers to the median

value it's referring to the results of full nuclear fuel cycles greenhouse gas emissions studies that have been performed by other authors and I am reporting the results in a manner that's consistent with how they have reported it as well. So Warner and Heath's study is the one that reported that 12 grams of CO₂ per kilowatt hour of electricity from nuclear power and the authors felt that the median was a better representation of the true value than the average in that case because the preponderance of evidence suggested that it was lower and some of -- that was weighted based on the studies that were included, so they felt that that was a more accurate representation. Other studies have reported an average value and have come up with higher numbers as well. So in my papers I have just reflected the thoughts of those original authors and I haven't really changed their perspective.

In terms of how it affects the impacts of my study, it makes no difference to the results of my study except to say that right now the results of my study show the emissions from mining and milling are about 10 percent of that full nuclear fuel cycle if we assume that the median value from the Warner and Heath study is accurate. If you assume that it's an average value, then maybe mining and milling is not 10 percent, it's 5 percent or 2 percent of the full lifecycle. So the implications for this study

are only how big of a fraction of the full nuclear fuel cycle are the emissions from mining and milling, but overall the conclusion is that mining and milling make a very small contribution to emissions from electricity production overall.

MEMBER TOLGYESI: And my second. You are talking about 12 grams, it's about the full nuclear fuel cycle. Does it include behind mining, the long-term storage of fuel? Because that's the question, we don't know how it will be stored. So how could you find if you don't know how you store, what will be the emissions to reach that storage? We are talking about underground mine, to develop something and store it in a deep geological repository or what were you considering in this study to that part? Because you have a full nuclear fuel cycle.

MR. PARKER: David Parker for the record.

Okay, so I will answer in two parts.

So looking just at the mining and milling itself, my study did include the decommissioning aspects according to the decommissioning plans included or supplied by the various facilities.

Now, in terms of the nuclear fuel cycle overall from those other studies, normally that would include mining and milling refinement, conversion, fuel fabrication, the construction of the nuclear power plant

and its decommissioning. I do understand that the long-term storage of fuel is a gap and I didn't look in detail at that aspect. So I expect that some of the variation in the numbers is due to the uncertainty in that. There will be a lot of estimates that will have widely divergent results which will likely play into the overall uncertainty in the studies that are out there right now. That's not an area I looked in great detail into though as it wasn't a focus of my study.

THE CHAIRMAN: Dr. Soliman...?

MEMBER SOLIMAN: Thank you very much. This is very good research. I have one question on the emission sources you mentioned on page 2 of H9.2. There are 15 emissions sources and I would like to know how did you manage all of this information. Sometimes this information would be given as a median instead of upper limit or lower limit and if you pick up the median then you are maybe not estimating correctly the final emissions from all -- the contribution from all of these. So if you can give me just how did you manage these emission sources as an input to your final conclusion and whether this is overestimated or underestimated?

MR. PARKER: David Parker for the record.

So the information that I used to compile the study came from a number of sources, all with different

amounts of certainty. So I compiled them just to give you a high-level overview of how it was done, I drew in data from a number of different sources and I put it into a computer model and then based on the relative confidence for each parameter I was able to actually assess the uncertainty on a parameter by parameter basis and code that into the model and then come out with an overall uncertainty in my final number and that uncertainty is published in the original paper.

But I can speak to some of the specific elements. So the most significant contributions to emissions overall were from energy and that was actually very fortunate because that's what we have the best data on. The mine -- the companies keep very good records of their total consumption of electricity, propane, diesel, gasoline, and when that makes up over 69 or 70 percent of the total emissions profile, that means we have a really good handle on the bulk of the emissions. So we know how much of that fuel or other energy source was consumed and there has also been a lot of really good research on what the emissions from each of those sources are. So we have a great handle on that number.

Then we have things like the reagents. So the companies also keep track of the reagents they use and in what processes. A lot of times these end up in -- these

information end up in their annual regulatory reports and so we have a good amount of information on the actual quantity of these reagents that they use.

What's a little bit less clear is the emissions per kilogram of ammonia consumed for example. For this I was able to leverage a lifecycle inventory database that -- it's called ecoinvent, the database that I used, and what it has done is collected information on emissions from each reagent, so let's say ammonia. It has created an entire process for each product. So for ammonia it paints its entire lifecycle from resource extraction, processing until it becomes that final product and it draws data from a number of different studies, and that ecoinvent database actually includes the uncertainty based on how much information was available, the relative quality of that information and the variation between studies. So there's the activity data, how much was actually used, we have great data on that. And then there's the what's the emissions per unit and for that I relied on the ecoinvent database and the uncertainty range was included in that database and made its way into the final result and is reported in the original study.

There are other things like the building footprint for example. Cameco was very helpful in allowing me access to see plans for a building so I could actually

measure the size of containers and actually calculate the number of steel in each piece of equipment. So I got down to that level, actually calculating how much steel was in a building for example. And once I had a few buildings calculated, then I could apply that knowledge to other buildings where I didn't have such great information.

And then there are other elements that are a lot less certain. I'm trying to think of some examples. But the overall point is that for most of the activities the amount of activity or consumption data is well known. The uncertainty is included in every parameter and is reported and the overall uncertainty in the results is very low.

MEMBER SOLIMAN: Percentage confidence in the final conclusion, how much?

MR. PARKER: Dave Parker for the record. So it varied a bit between sites, but it was generally plus or minus about 5 percent.

THE CHAIRMAN: Dr. Demeter...?

MEMBER DEMETER: My question has been answered, thank you.

THE CHAIRMAN: Mr. Seeley...?

Mr. Tolgyesi...?

MEMBER TOLGYESI: What will you do next? Why did you do it? You know, you have something -- you did

it with Saskatchewan University.

MR. PARKER: David Parker for the record.

So this project was undertaken as part of my Master's study in engineering and so I previously didn't have a lot of interest in lifecycle analysis, but I realized the value it had once I undertook this study. And I moved directly from the U of S after completing this study to a similar role at Saskatchewan Research Council where I work now and so one of the services we provide companies is lifecycle analysis and carbon footprinting, so applying these techniques. The LCA technique can be applied to products and services regardless of where they come from and it can be very useful, so that is one of my roles in my current occupation. So I continue to provide this service as needed.

THE CHAIRMAN: Dr. Soliman...?

So I have a couple of questions. So if I look at your Slide 5, what I find striking about this is there is -- I mean, really, considering the uncertainties in the methodologies, broad agreement between -- sorry, it's the comparasion slide, sorry.

There is very broad agreement between most of the studies. There is one significant outlier which almost reflects an increase from the other outlier study, which both have the same authors. So why is there that

level of discrepancy between the bulk of the studies and those two authors?

MR. PARKER: David Parker for the record.

So I will start by addressing the study with the highest results, Storm van Leeuwen & Smith 2007. So they report a result of almost 25 grams of CO₂ per kilowatt hour electricity produced. Storm van Leeuwen is a noted nuclear sceptic and he speaks out a lot against nuclear power, so I expect there is a little bit of bias in this result, but he also presented a scenario where ore grades were quite low, so .06 percent, which is lower than the world average by some factor, and he also selected a scenario where it was I think what he called a hard rock ore or a hard ore where it was just going to be quite a bit more difficult to actually access the resource directly. So it was a situation that he kind of cooked up to say if we have all of these great challenges we have to overcome, what is kind of like the higher number of emissions that we would expect from uranium mining.

And you will note that the second-highest result is also by the same author for a different scenario, so that's .15 percent uranium where U308 was the ore grade in that study. So then he was trying to reflect a world average.

And then on the lower end, Tokimatsu et

al. have a result of 0.05 grams of CO₂ per kilowatt hour. That study, if I recall correctly, was written in Japanese and I tried really hard to get a copy I could understand but I could not, so I can't say too much about it. But based on the work that I have done I would expect that a result so low is very implausible. That's all I can say.

THE CHAIRMAN: And this was your Master's thesis?

MR. PARKER: It was.

THE CHAIRMAN: Who was it funded by?

MR. PARKER: This was funded -- it was a partnership. So there is the Sylvia Fedoruk Centre for Nuclear Innovation which provides some of the funding for that and then Cameco and AREVA also provided partnership funding and in-kind contributions in order to -- they were supplying all the data, so there was a significant in-kind contribution in terms of data collection and supplying and meetings, which was invaluable in helping me not only have access to good data but insight into the industries and site tours and everything. So I got to actually see firsthand the operations that I was speaking about.

THE CHAIRMAN: And you were able to validate the data they gave you?

MR. PARKER: I spent a lot of time, especially at Cameco, looking through the data and in some

cases had access to invoices directly and I have no reason to believe that the data that I was provided is inaccurate in any way.

THE CHAIRMAN: And you published this, yes?

MR. PARKER: Yes. I have a couple of copies here if anybody is interested, but it's published in Environmental Science and Technology and I believe it was July 2016 -- yes, July 2016 that it was published. The title of the paper is "Lifecycle Greenhouse Gas Emissions from Uranium Mining and Milling in Canada."

THE CHAIRMAN: So thank you. The last word is yours.

MR. PARKER: Thank you.

I guess I'd just like to thank the Commission for allowing me time to share the results of the study. I think that life cycle analysis is a very useful tool to be used not only in this sort of industry but is probably essential in making informed decisions about using any product or process or service that has an environmental component.

Again, I'd like to also thank Cameco and AREVA for being such willing collaborators on this project and looking forward to see what comes out in future.

CMD 17-H9.4

Oral presentation by UNIFOR Local 48s

THE CHAIRMAN: Thank you very much.

So we move to our next and last oral presentation. This is a submission by UNIFOR Local 48s, as outlined in CMD 17-H9.4.

I understand that Ms Angela Laventure and Mr. Dale Daigneault will be presenting.

Ms Laventure...?

MS LAVENTURE: Good morning, Members of the Commission, ladies and gentlemen.

My name is Angela Laventure. I am an industrial mechanic at the McClean Lake Mill. I work in the maintenance department. I am also the President of UNIFOR Local 48s which is our union. It represents workers in the operations, mill maintenance warehouse and site services departments. We have approximately 180 members.

I made an error in my written submission. We are -- actually 71 percent of our membership is from -- has Northern status, not 54 percent as I had stated in that document.

We have members from many Northern communities, a few that I could recall are Wollaston, Black Lake, Fond du Lac, Stony Rapids, Pinehouse, La Loche,

Buffalo Narrows, Beauval, Ile-a-la Crosse, La Ronge, Sandy Bay, Cumberland House, Denare Beach, Uranium City, South End. And I'm sure I have missed a few but it gives you an idea that we have quite a -- quite a few members from Saskatchewan's Northern communities that are represented.

We have very successful trades helper and power engineering training programs where Northern members are successful in achieving their trade apprenticeship, receiving their power engineer status. The program goes up to second class.

We currently have six apprentices in various apprenticeships and then we have seven power engineer trainees. They actually just posted another one, so we'll be up to eight members that are in the power engineering training program. As I mentioned, all of these -- one of the requirements to be approved for this program is you need to be a member of Saskatchewan's North.

On our site we go through various training in radiation protection so that workers really, truly understand the principles of ALARA which is to ensure that our exposure to radiation is as low as reasonably achievable. With that we also have ongoing training that we have to take every two years or, actually, yearly for that.

We have a safety culture on our site which

encourages all workers to watch out not only for themselves but for everyone else, all their co-workers around them, visitors that may be touring our facility and also management.

Daily, we fill out five point safety cards where if a workers has a safety concern that can be documented. And when -- in a reasonable amount of time, usually in a few days, management has to come back to them with an explanation or with what the intended correction will be. The worker actually has to agree and sign off on that, that they are comfortable with what management has come back with them. We also have weekly safety huddles in all our departments.

At McClean Lake we have a very strict environmental protection policy which all workers whether they are from the Northern communities or the Southern communities, they all respect and follow those policies.

And in closing, for myself, as we stated in our written submission the members of UNIFOR Local 48s are in full support of AREVA's application for a 12-year operating licence renewal.

MR. DAIGNEAULT: Good morning. Bonjour Mesdames, Messieurs. (Aboriginal language spoken).

Good morning. My name is Dale Daigneault. I am a former mill operator and also an employee of the --

employee representative of the occupational health and safety for the McClean Lake Mine site.

So as a mill operator at the JEB Mill we are required to undergo training as it relates to being onsite. Our training is divided into two components. The first component is the core training requirement of you based on your occupation and the second component is the training you require as a process operator.

Mill operators are trained in a wide variety of training. There is WHMIS safe work practices, emergency response, lockout procedures, radiation protection, power mobile equipment, environmental policies and procedures, confined space entry, fire extinguisher use and also OHSAS 18001 and personal fall protection and various methods of troubleshooting is what we do in the mill.

As a worker in the operation, maintenance and service group at McClean Lake, we work a week in/week out rotation, so spending half of our -- well, spending the majority of our time at the mine site. And since we have this kind of work arrangement, we come to know and acknowledge each other as family because we spend the majority of our time at work than we do at home. So with saying that, that's pretty well all I have for that.

Oh, yeah, we welcome any questions you

have.

THE CHAIRMAN: Thank you.

Dr. Soliman...?

MEMBER SOLIMAN: Thank you. Good presentation.

On page 1 of H9.4, the first paragraph:

"UNIFOR recognizes the length of license term is quite lengthy, however we would be in support of it ... [of an endorsement because industry is] heavily regulated..."

Is this the only reason you support a 12-year licence is because industry is heavily regulated?

MS LAVENTURE: Angela Laventure for the record.

No, that is not the only reason. We recognize that the industry is heavily regulated and all of other aspects of our mining are -- we're very transparent with our company. We have an excellent labour relation relationship with them. We have a very open dialogue between our management onsite and our senior management in Saskatoon.

Our occupational health committee is very active and when our members go to the company with a concern or when there is -- maybe they are looking at a

change in process they actually go to the membership and ask for their input. They put that -- they take that valuable information and go forward with it.

So I think because we have such a strong relationship with our company we are fully in support of the application.

THE CHAIRMAN: Thank you.

Dr. Demeter...?

MEMBER DEMETER: Thank you for the presentation.

UNIFOR Local 48s just covers the AREVA plant and is there a UNIFOR Local that covers the Cameco operation as well? Do you have a sister or brother local that is involved at the other sites?

MS LAVENTURE: Angela Laventure for the record.

AREVA, our site is UNIFOR. The union that represents the members at Key Lake and McArthur River is actually Steelworkers. We don't have the same national union for all the sites.

MEMBER DEMETER: Is there an opportunity for the two unions to get together to share stories on best practices and lessons learned?

MS LAVENTURE: Angela Laventure for the record.

We do communicate back and forth, the presidents of the locals, and actually the Canadian Nuclear Workers conference that we attend, both companies attend that. So we also have the opportunity at that time to communicate.

MEMBER DEMETER: And in your submission there is a paragraph on labour relations and there will always -- the comment there will always be disagreements in the interpretation of the agreement.

In the unfortunate or unlikely event of irreconcilable differences between labour and management is there a standardized operational plan for safe shutdown in the event of -- or essential services agreement in that kind of unlikely but mitigatable event?

Maybe to, actually to AREVA, not -- imagine putting the staff on it.

MR. HUFFMAN: Dale Huffman with AREVA.

Yes, there is. We can close -- if it came to that we can close down the operation and put it in a safe state. However, we would have to continue to operate our water treatment plant. There are facilities onsite that we'd need to continue to operate. We have people trained to do that. But, yes.

MEMBER DEMETER: Thank you.

THE CHAIRMAN: Mr. Tolygesi...?

MEMBER TOLYGESI: You were talking about this five point safety card. I think you were saying that there is a point where you mentioned dangerous conditions or dangerous practices or tools, et cetera. So are these cards kept by an employer, by a supervisor until the conditions are corrected, then communicated to employees in this regard or what's the practice?

MR. LANIECE: Vincent Laniece for the record.

Yes, these cards are being filled each and every shift or each and every day. When we have got being reported on the card that there is something that is of concern to the employee, we have a process right now that the concern is being written in the coffee room boards and then it translates to our action tracker so that then we can proceed on whatever concern we need to address. At the same time we have got a timely way or timely manner to get back to the employee and update him or her on where we are with the evolution of the concern.

Long term, the five point safety card, I don't know effectively for how long we are keeping the cards in the archives.

MEMBER TOLGYESI: So do you have feedback on that to your safety committee, health and safety -- joint health and safety committee as an employee?

MS LAVENTURE: Angela Laventure for the record.

So when we fill out on our safety card with a safety concern it's documented and, as Vincent mentioned, we have white boards in our -- all of our coffee rooms. So they document what the concern is, the date, and then they have a follow up category. So when there is a follow up category it may be that a work order is issued and they will document that. At that point they go back to the worker and ensure that the worker is satisfied with the outcome and how the outcome of what the safety concern was.

I don't know if you have any more?

MR. DAIGNEAULT: Yeah. So saying that that we do document all our stuff, whatever we have that's kind of a concern to us. And then we bring it up to our supervisor also and also document it on a five point safety card.

And then -- and then we also inform our occupational health and safety. So whatever concern that we have, we kind of work and strive and work together in regards to deal with situations like that.

And then that's when we bring it up to the occupational health when we have our committee meetings every -- quarterly or once every quarterly on sites.

MEMBER TOLGYESI: My last, do you have any

grievances? How do you call that, grievances? How do you proceed? Do you have lots of grievances?

MS LAVENTURE: Angela Laventure for the record.

Currently, I think we have three ongoing grievances with AREVA. They range -- most of the time we can come to an agreement onsite with our site HR.

We hold quarterly union management meetings where all senior managers and union executive along with our national representatives gather in a meeting. At that point in time most grievances that we may have with the company are resolved, although in the past we have had some where we've had to schedule for arbitration. But they have been settled prior to that arbitration hearing.

So I'm not sure if the company has anything to add.

MR. LANIECE: Vincent Laniece for the record.

Yes, as Angela was mentioning, we have a couple of grievances right now, two or three, on the books that we're striving to making sure that we are addressing them in good face-to-face and collaborative type of discussions. And we have got the odd case when effectively we need to go through arbitration to make sure that we've

got a third party intervening and making the judgment on how we should proceed going forward. We've got a fairly good process in place.

THE CHAIRMAN: Can I just ask what do the five point cards look like? Could we see one?

--- Laughter / Rires

THE CHAIRMAN: Just a thought.

MR. HUFFMAN: Dale Huffman for the record. I don't have one in my pocket, I'm sorry.

MEMBER TOLGYESI: You could describe -- describe maybe the five points.

MR. HUFFMAN: The five points, the five point safety has been a longstanding safety system in mining. For decades people have carried a card around in the workplace to remind them to work safely. It has a set of questions on it about: Are your travel ways clear? Are you working safely? Do you have the tools and the resources to do your job?

It requires that you do an active safety so that you take active participation in your own safety by taking an action each and every day.

Now, at McClean Lake we have broadened the practice of use of five point safety cards as these are also something where we would document a safety concern that can be brought forward. That's been described. We

also really want to drive ensuring that the supervisor sees their employees every day in the field and has some sort of interaction on safety. So it's our method of making that happen.

So it's been -- there is many variations on five point safety. This is how we're practicing it. There has been good improvement over the last few years in making sure that this feedback is getting back to people that have brought up concerns and having their concern solved.

So we consider it part of the backbone of our safety system onsite.

MS LAVENTURE: If I could just add -- Angela Laventure for the record -- it's also a tool that ensures our supervisors go around and check on us in the field. If we have any concerns at that time, it also gives them the ability to try and correct an issue before it becomes a concern. It makes the workers aware to make sure that they are always looking, checking their surroundings. Maybe their surroundings have changed while they have been working in that environment. So it also is a good tool to remind us to continually be open to the fact that our environments could change at any time.

MEMBER TOLGYESI: Just to complete that, it was developed in 1949 by Neil George and it's used

worldwide. I saw that in South Africa and in China -- not in China, in Finland and Mexico and South America.

MR. HUFFMAN: Dale Huffman for the record.

Just to point out the irony of you asking to see one is this is something that managers or supervisors would regularly do in the workplace and a worker would pull it out of their pocket and there would be a discussion. I'm embarrassed I couldn't do that today because that would have been great. But thanks for the questions.

THE CHAIRMAN: Mr. Seeley...?

MEMBER SEELEY: Yeah, maybe just a couple of questions about the Green Hand program and orientation for new employees. It just seems over the eight-year licence period you had quite a change in activity level from a mining and milling operation to kind of a hold for four years, and then now ramping up again with a significant growth in the mill activities.

So bringing new people on, I guess my first question, was there a change in workforce numbers there as well, particularly over the last three years going from a lower number to a higher number?

MR. HUFFMAN: Dale Huffman for the record.

I am going to pass this to Vincent Laniece who has participated personally in the Green Hand program.

MR. LANIECE: Vincent Laniece for the record.

Yes, during the restart of the mill so from 2014 to where we are right now, of course, we ramped activity with a number of employees that we got up at the mine site. During the current maintenance period we were likely in the range of about 100 to 130 employees, whereas right now we are in the range of 130 employees.

As part of the Green Hand program I am the general manager of the site since early 2016. So I have been effectively -- I went through the Green Hand program with my hard hat having a green hand stuck to it, you know, there for my co-workers to make sure that when I was working inside the mill I would do it safely. And I got some very good advice.

One example of which would be we have got safety days at the McClean Lake Mine site during which globally we were doing it for the whole shift. And we have got one day that we are really making sure that we are hammering the safety message and that we want the employees to go back home safe.

And in 2016 the topic of our safety day was to bring a manager or supervisor in the field but in the field that is not the regular workplace for this person. And myself I had the privilege to go in the

calciner to go and do some checkup and PMs on the burners at the calciner. So it's a very type of hot environment. The calciner is 8,200°C so I was not inside the calciner per se but fairly close to it. So I was wearing a heat pack. And one of the recommendations that I got from the employee was -- he's showing me how to do these preventative methods -- I have a ring because I am married person, so he told me maybe that would be a good idea if you would remove your ring before you get into the calciner, which I did.

And I'm very thankful that he provided me with that advice because at the end of the day I didn't burn my finger, so...

MEMBER SEELEY: Thank you. Maybe just a quick -- yeah, for Angela and Dale.

So, for new hires coming onto the site whether they're brand new into the workforce, which I guess they would be, wearing the green hand, but also just new to the site.

Could you just comment on orientation with respect to safety and preparing those people for the new site?

MR. DAIGNEAULT: Dale Daigneault, for the record.

Okay. I'm a former mill operator. I've

worked -- well, I was hired as a senior operator for McClean Lake mine site, so I have quite the experience. I worked with Cameco, the McClean Lake, same kind of uranium mine site.

So, the training that we do with newcomers that come into the mill -- I notice, I give a big hands up in regards to the training that McClean Lake do. So, they train -- as an operator comes in through the new program that they have, they're well trained into these components, these modules they call them, so they teach them the first steps of safety, safety in the area.

And then the next one is all, where's the equipment, and then, that's where we fit in as operators and peers to teach these newcomers. So, we're actually shadowing them which in regards, they help us out doing our process.

So, we kind of shadow them by teaching them where -- what reagents we're using, what equipment, how dangerous it is, teaching them where to find out their MSDSs, what could happen, stuff like that. So, we kind of just -- we train them as best we can as they're coming in.

So, that's what we do. Thank you.

MS LAVENTURE: Angela Laventure, for the record.

At McClean Lake we have a program, they

actually do a mill Op training program. So, they take very young people from northern communities who have never been exposed to an industrial site.

They come and they do an eight-week program, and then from that, as jobs open up, then AREVA has a hiring pool, if you will.

Being that these people have only spent, you know, a few weeks on our site, a lot of the time is in a classroom, probably half of it, and half of it is in the mill.

They're not -- they haven't been exposed to that type of an industry. So, the Green Hand Program, not only does it benefit them, but when you're working with them, the questions that they're asking us as senior operators or maintenance, it also makes us -- ensures that we don't become complacent in our workplace.

So, we mentor them, but they also -- in return, they're also teaching us and ensuring that we don't become complacent.

And we have a very, very young workforce that will be there for many years to come. AREVA's done a really good job putting together -- as Dale mentioned before, we're like a family there and the mentality is, is you don't ever want your family to get hurt. So, the Green Hand Program is good for the younger people, but it's also

good for the workers that have been there for the time.

MEMBER SEELEY: Thank you.

THE CHAIRMAN: Dr. Soliman? Oh, so done.
Mr. Tolygesi? No.

So, I think we've finished our questions.
The last word is yours.

MS LAVENTURE: I would just like to take this opportunity to thank AREVA for allowing us to be present and for the Commission for taking the time to listen to our concerns and our -- again, we're in full -- we'd like to support this fully and at any time, I mean, if there's if ever any other questions, I know we -- when CNSC inspectors come to site they've quite often asked questions in the past, so we've always been open to that as well.

So, thank you for your time.

THE CHAIRMAN: Thank you very much. And thank you for the submission.

So, we'll move to the last of the submissions which is a written intervention by the Saskatchewan Mining Association.

CMD 17-H9.9

**Written submission from the
Saskatchewan Mining Association**

THE CHAIRMAN: Do we have any questions from Commission Members?

No. Dr. Soliman?

MEMBER SOLIMAN: I find that this submission really is concerning lots of questions. I would like to give them the credit for this written submission. I hope that they would have the time to present it for us.

Some of the questions which was going in my mind has been answered in here, but I would like AREVA to confirm these numbers.

The submission in page 1 said:

"We are aware that in 2016, 51 per cent of the employees at MLO were from northern Saskatchewan and 46 per cent were self-declared Indigenous."

(As read)

So, this is -- you confirm that, or...?

MR. HUFFMAN: Dale Huffman, for the record.

Yes, we confirm that and we mentioned it, I think, again in our opening statement.

MEMBER SOLIMAN: There is another confirmation here.

"In 2016, AREVA spent over \$64-million with northern Saskatchewan owned businesses and, more specifically, over \$44-million with companies owned by communities in the farthest northern part of Saskatchewan." (As read)

You confirm that too, or the numbers is if you like, just the numbers?

MR. HUFFMAN: Dale Huffman, for the record.

Yeah, we confirm these numbers. These are all numbers that we're very proud of.

MEMBER SOLIMAN: Thank you very much.

THE CHAIRMAN: Okay. So, I think this ends the round of interventions. And I think it's about noon, so I suggest we break for lunch.

Marc?

M. LEBLANC: Yes. We'll take a one-hour lunch and we'll come back for final rounds of questions to AREVA, staff and the other government departments, should they still be available.

Thank you very much.

That will take us to one o'clock.

--- Upon recessing at 11:55 a.m. /

Suspension à 11 h 55

--- Upon resuming at 1:04 p.m. /

Reprise à 13 h 04

THE CHAIRMAN: So, good afternoon.

We now move to the final round of questions. My plan is that we will do as many rounds as we need with just one question, plus follow-up questions from each of the Commission Members.

And so, I'm going to start the final round of questions with Dr. Soliman.

MEMBER SOLIMAN: Thank you.

My first question to AREVA. You have given in section 2.2 on document H9.1A justifications for the 12-year licence renewal term. In your justification you said:

"Prepare EP TIDs in five years, review by CNSC, raise dispositions or comments, final issue of EP TIDs is one year more." (As read)

So, this is six years. So, I understand that you are talking about two cycles for that document.

Is there any other reason for the 12 years emanating from safety, environment, security, any of the other safety concerns that you are asking for 12 years' term?

MR. HUFFMAN: Dale Huffman, for the record.

We've primarily asked for the 12-year licensing term to align with this environmental performance report which we think is a key document that both the CNSC and others should look at as we head into licensing.

It is two cycles of that document, as you point out, so we do update that on a five-year period, and we're suggesting that after the second -- the second submission would be appropriate and we're aligning a schedule to meet that.

Now, I would like to point out that our request for the 12-year term is really based on resource levelling. If that report for some reason, if it would work for nine years, I'd be asking for a nine-year licence, but we're asking for 12 because of that alignment and wanting to be respectful of the review periods for both the regulators and for potential intervenors.

We're not basing the 12-year term on anything else. My colleague, Mr. Mooney, mentioned this morning, we are concerned a bit about just pure

re-licensing. You can see from some of the interventions there's confusion caused by re-licensing and understanding what it is exactly that we're doing here. So, a move towards longer licence terms in the future, especially when they're backstopped by the annual ROR, regulatory oversight reports, are very supportive of these longer licence terms.

So, thank you.

THE CHAIRMAN: So, can I just ask, what is the current sequencing of these five-year report cycles?

MR. HUFFMAN: Dale Huffman with AREVA. We submitted the most recent report at the end of September, 2016 and so, the next report would be due five years from that, so 2021, and then 2026.

THE CHAIRMAN: And I saw in the staff CMD that each of these takes a year to review. Why?

MS TADROS: Haidy Tadros, for the record.

That is correct, sir. We typically look at the information and, as AREVA's pointed out, when there are data or information that we require more information on, then that is when we ask for information request to get more clarity on the information that's been submitted.

But the year also takes into account staff's process for putting together the Commission Member document which, again, uses a lot of the information that comes from AREVA's submissions.

THE CHAIRMAN: So, your 2016 submission was for the 2011-2015 time period?

MR. HUFFMAN: Dale Huffman. That's correct.

THE CHAIRMAN: Mr. Jammal?

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

I think we're getting ourselves into a little of a dual loop here with no end.

What the key points here -- you're asking a very valid question. As the licence requirement has transitioned with respect to the environmental performance, updating the ERAs and so on and so forth, I would like to remind the Commission the fact that we are in control of our own regulatory requirement. So, in other words, 12-year, 10-year or shorter or longer, we determine the regulatory requirement that the licensee must report against.

So, if we're going to go for a 10-year licence, I think we are mature enough in order to adjust the regulatory requirement so that we are able to obtain the information in order to support the licensing, depending on the period.

So, there is a cyclical requirement by the licensee to submit to the Commission in order to determine

that the licensed activity and the operations by the licensee are both equal. So, any changes in the operations or any changes in the performance of the licensee, then we can go back and determine the needs for the licensing requirement.

In principle, the licensing term is not a compliance activity. Many other jurisdictions in the world, they licence with a 25-year licence or a 30-year licence. I'm not going to go into debate of the licensing term here. I would like to clarify to the Commission that historically we've been -- we went from two years to five years to 10 years.

We put in place the regulatory oversight to review reports in order to allow the public intervention because it's a longer licensing period. So the RORs or regulatory oversight reports will continue, but the requirements of submission of documents in support of the licensing -- relicensing, let me put it this way, and the documents in support of determining the licensee performance are under our control.

So the Commission will have to determine literally 10 or 12. From staff's perspective, we can live with 10, we can live with 12. If you recommend and accept a 10-year licence as a hypothetical, then we can adjust the regulatory requirements so it's meeting the next

relicensing cycle.

Because as staff perspective, we live by two facts. Sometimes the regulatory requirement to submit a report on a five-year cycle that probably falls right at the licensing review, and then the Commission did not like that at all. For example, at the Western Waste Management Facility and the Pickering Facility, the fact was the ERA was submitted in between part 1, I believe, I think, and part 2, in between the licensing. Staff could not finish the review. So that caused some difficulty.

So based on your recommendation, based on after your deliberation, we will accordingly adjust the regulatory requirements. But I fully understand and appreciate that the licensee would like to have regulatory certainty and what it means.

THE CHAIRMAN: AREVA.

MR. HUFFMAN: Dale Huffman with AREVA.

I appreciate the comments and know that the regulatory periods can be adjusted. I wouldn't want to see an adjustment made for the requirement of our environmental performance technical documents to shorten the time frame to meet the time period of the licence. We've got an established schedule for these documents. They're updated on five-year terms. And we've presented a rationale for our licence based on these key documents.

So in our licence application we felt it was our obligation to propose the licence term, and we've put the rationale for that term in place.

And perhaps just to backtrack a little bit on the review cycle. It was mentioned that it takes about a year. To explain that a little bit better, we submit the document and we get comments back from both the CNSC and Saskatchewan Ministry of Environment. And typically we'll have updated that document as need be in the course of the year following the original submission.

Where we find ourselves today is having prepared the renewal documents in parallel with that review, we haven't received a review from Saskatchewan Environment, and we've provided this document also in parallel to intervenors. We would prefer not to provide -- to update the document as need be before making it available to intervenors, but for this licensing period we did all that in parallel.

THE CHAIRMAN: Soliman, sorry. Okay, Dr. Demeter?

MEMBER DEMETER: Thank you.

My questions will start very technical, and as we go along they'll be more broader policy.

So the first one is just to point out two what I think are errors in documents that I think for the

record need to be corrected or challenged, my interpretation.

So on AREVA's written submission page 3-23 under 3.7.2 Past Performance and near the end of the first paragraph, it says that the --

"... demonstrates the maximum and average site doses over the past eight years at the McClean Lake Operation relative to the annualized regulatory limit of 100 millisieverts per year."

That should be an annualized 20 millisieverts per year or 50 in one year, averaged to 20 over five. So it's just a point, unless you disagree with me.

And the other correction is on AREVA's oral presentation slide deck, slide 18. It shows the selenium. The selenium graph shows your selenium and then it shows the SSWQO, which I think is Saskatchewan limits. It's set at 1, and it's 0.6 I think is the Saskatchewan limit. Is that correct or incorrect?

MR. HUFFMAN: Dale Huffman for the record.

The limit is 0.6, and the Saskatchewan Surface Water Quality Objective is 1 microgram per litre.

MEMBER DEMETER: Okay, that's fair.

And I just wanted to point out that I was happy on a subsequent slide where you showed your radiation dose limits, which I'll talk about later, at -- your bar for the maximum dose is at 20, whereas in staff's presentation it was at 50 over multiple years, which probably should be lowered to 20 unless it's one year. So I'll talk about that later, but that's all I had for this round. Thank you.

THE CHAIRMAN: Mr. Seeley.

MEMBER SEELEY: I just had a question for AREVA.

In one of our previous hearings we heard a lot about the importance of integrating your emergency response plan, fire protection type activities with regional communities and those outside. It was a key learning from Fukushima.

And I know we're not running a nuclear power plant here, but I think in terms of a mining activity in Northern Saskatchewan, the major risk would be a forest fire, as we've seen in Fort McMurray last year. And so the importance of that linkage to the other -- to other mining sites, whether it's a mutual aid agreement, and even linkage to communities and even doing some training with them and engagement with them. So maybe you could comment on has this been considered by your operation.

MR. HUFFMAN: Dale Huffman with AREVA.

We plan our emergency services on site to be self-contained. We're a long way from help. That said, we have mutual agreements with the neighbouring mine sites. So as I mentioned this morning, so if we needed help we could call on them.

We all train to the similar standards. So there are NFPA standards, and there are CSA standards, and there are standards in the province which each of the mine rescue teams, emergency response teams train to. So we have similarities there.

On occasion we will get together with our Cameco sites and plan joint response exercises. So we've done joint response exercises for a transportation emergency between Cigar Lake and McClean Lake, for example.

And then most recently, we all compete in the same mine rescue competition. So this is -- demonstrates we're all training to the same standard, and then we come together once a year and have a competition of -- a skills competition. And that was just held last weekend. And our McClean Lake team managed to win the fire fighting competition. But again, it shows we're training to the same standard.

THE CHAIRMAN: M. Tolgyesi?

MEMBER TOLGYESI: Merci Monsieur le

Président.

On page 24 of the staff presentation, but this is for AREVA. Question is you have a McClean Lake milling production data. Okay? CMD of the staff, page 24, Table 4. McClean Lake milling production data from 2009 to 2016.

Now, when I'm looking at 2009, there was an average milling grade 0.97. Recovery was there. So the tailings were at some content of uranium. Now, when I'm looking 2016, your grade increased sky high. And your -- although your recovery improved, your uranium in tailings increased about close to fourfold.

Do you see any problems or challenges because you have much more uranium in your tailings? Do you see any challenges to process, to recover, or tailing procedures or whatnot?

MR. HUFFMAN: Dale Huffman with AREVA.

We conduct a tailings optimization and validation program which is intrusive sampling of the tailings on a periodic basis. One of the key elements that we look at is uranium and want to assure that uranium behaviour in the tailings is going to be such that over the long term the environment's protected. Obviously, we don't want to send uranium to the tailings; we want to send uranium to drums and have it be our product. But from an

environmental perspective, I don't consider this a concern. It's perhaps an economic concern.

MEMBER TOLGYESI: Yeah, because uranium content increased from 1,050 tonnes in 2009 to close to 4,000 tonnes rejected in tailings in 2016.

Staff? There is no problem? You don't see any problems, challenges, or difficulties?

MS TADROS: Haidy Tadros for the record, and thank you for the question.

Again, this information in terms of production is for AREVA to speak to.

From staff's perspective, what this means to us is the robustness of other programs -- such as their RP program, their management system, their training -- if they are to ramp up in terms of their work. And as in staff CMD it's described how we conduct our compliance oversight work on the increased operations that AREVA is -- but there is no -- from staff's perspective, there is no concern at this time.

THE CHAIRMAN: I just want to finish the licence term in this round, because I'm still not clear that I understand the rationale for the 12 years.

So the reporting cycle is 2011 to 2015, 2016 to 2020. That means the data you are submitting in 2016 reflects that five-year period. And you submitted

those data you said in September? I'm sorry, I've forgotten. In September.

MR. HUFFMAN: Dale Huffman with AREVA.

We submitted in September an update to our ecological risk assessment at the end of September. So the data are collected to the end of 2015 and there's considerable amount of work to do with that data before we produce an ecological risk assessment based on those data, so --

THE CHAIRMAN: So it takes you about nine months to put those data together into the risk assessment?

MR. HUFFMAN: Correct.

THE CHAIRMAN: And then the process for staff once they receive it in September, can you take me through that step by step, please.

MS TADROS: So Haidy Tadros for the record.

So as described, when the information comes in in September, part of our role is to provide the information to our technical specialists, who then go through the information on the technical information documents, and primarily that would be the role of our environmental protection group.

If it is a licensing term, if it is towards licensing, then we get our technical specialists

involved in all of the 14 safety and control areas to be able to fulfill on the commission member document that's put together by staff to describe all of the 14 CSAs.

So if, for example, the report comes in and it's only for staff's review of the five-year technical information data, then we would review that data through an environmental protection lens and provide AREVA with our comments on that. And that's where that would end.

If we are putting two cycles together for a licensing term, then we would go through the licensing process whereby other technical specialists get involved. And that's where the year would come into play for reviewing the information, providing AREVA with our comments and feedback and questions of clarification, and hence being able to write our commission member document for a licensing hearing.

THE CHAIRMAN: Mr. Rinker.

MR. McALLISTER: Andrew McAllister, director of the Environmental Risk Assessment Division. We are one of those technical divisions that Ms Tadros made reference to.

So these are large undertakings. The volume 2 of the environmental risk assessment, which it was comprised of both the ecological risk assessment and the human health risk assessment, was around 3,500 pages. So

it's large documents, multi-disciplinary in nature, that we need to draw upon. We follow our conduct of technical assessment process and it's, you know, the technical review, the peer review, the approval, and then the disposition by AREVA. So there can be one or more rounds of dispositions back and forth. So strictly from a technical perspective, it is a major undertaking that we do.

THE CHAIRMAN: And how many --

MR. RINKER: And we did -- sorry --

THE CHAIRMAN: Just you can answer this as you go through -- how many people would you have involved in it?

MR. McALLISTER: Andrew McAllister for the record.

In a typical review of this nature, I would say approximately a dozen to 14 specialist areas come into play.

MR. RINKER: Mike Rinker for the record.

Just to add, we did complete a review in advance of this hearing. It was not an easy task and it's not something that we would plan to do. And I note that Saskatchewan Environment is still working on their review.

THE CHAIRMAN: So really we're back to Mr. Jammal's comments in terms of sequencing and working

out the best way of doing that sequencing. Okay. Thank you.

Dr. Soliman.

MEMBER SOLIMAN: Thank you.

This question for staff. On document H9.A, page 5, fourth bullet. CNSC staff will be meeting with two Aboriginal groups, Buffalo River and Birch Narrows groups in Saskatoon, Saskatchewan, on May 25, 2017. Is this meeting happen already? And what exactly discussed, and did the Dene have -- their concern has been resolved concerning CNSC response and meetings and information and all of that? Could you please comment on that.

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

So I believe the answer to your question is yes, the meeting has taken place, the details of which I will pass on to my colleague Mr. Bob Lojk, who was actually at the meeting and can describe to you the conversation. As was raised by the intervenor as well, Birch Narrows, some of the discussions were already discussed yesterday in terms of what came out. But CNSC staff will give you our perspective on the conversation.

MR. LOJK: Bob Lojk for the record.

I was accompanied at the meeting by Saskatoon staff, CNSC legal counsel, and our Aboriginal

affair persons. And then I would like to perhaps invite after I complete my point to pass it on to Adam Levine, who in fact has been working on this file for the last six months or so.

Essentially, the meeting was focussed -- legal counsel for the bands spoke uninterrupted for a long time, making exactly the same position that was made here yesterday. We could not -- and then issues were brought up, lack of information, you didn't talk to us. We tried to discuss, explain the availability of CNSC staff, CNSC position, how we worked on this. We wanted to understand what the impact was, given the remoteness of that particular group from the facility and the intervening groups that are in there using the same area. And it turned out at the very end, as was pointed out yesterday, it wasn't a very productive morning.

Towards the afternoon we kind of decided to go a different tack. We asked the legal counsel for the band not to speak on behalf of the band, and we asked -- we invited the band members themselves and the Elders and the chiefs to address, to tell us their concerns. And we found that very productive. And they essentially went to a long discussion of the miserable conditions that they have to live with and the lack of opportunities that are missing out there, leading to a lot of frustration. And their

feeling was that in fact they have not been consulted in a lot of areas. And they felt the need to be in contact.

And staff made every attempt to say, Look, we're here. We're available. We can provide training, information, and the like focus, but there are certain endemic problems that we cannot address, particularly the economic ones. And at that time we felt that we had reached a rapport and a good level of information exchanged, and that we created some trust between the members. And as a matter of fact, many of them thanked us for our effort and for opening their eyes to what was available and what was possible.

So we were a bit shocked yesterday at the presentation, which didn't reflect on what we believed to be the final conclusion to the meeting. And perhaps Mr. Levine would be -- would add some more details to that.

MR. LEVINE: Adam Levine, senior Aboriginal consultation advisor for the CNSC.

So in addition to what Mr. Lojk laid out in regards to the meeting, so it was really an introductory meeting between CNSC staff and members of the First Nations. CNSC staff provided a presentation, an overview of who the CNSC is, our mandate, and how we conduct regulatory oversight activities for the uranium mines and mills in northern Saskatchewan. And also talked about our

approach to Aboriginal engagement and our participant funding program, which they had applied for and received funding for this particular licence renewal. And then to talk about how we do regulatory oversight at the McClean Lake site and answer any questions that they had.

And we had a productive dialogue with them. We learned a lot about their particular interests and the -- you know, what's going on in their communities. And what we heard from them is, you know, they get a lot of questions actually in their communities about uranium mining and about radiation. And there's a lot of misinformation and not a lot of understanding about, you know, our role in ensuring the protection of the environment. So they asked us, you know, to provide some links to some of our documentation, to our independent environmental monitoring program, and work with them moving forward on getting some of this information to their citizens and community members.

And then we also heard, you know, there was definitely some concerns around economic development and things like that and jobs. And they -- but they understood clearly by the end of the meeting that it's not part of the CNSC's mandate. And but they appreciated the dialogue. And we'll be committed to working with them moving forward and coming to their communities if they like

so we could continue those discussions as we discussed yesterday as well.

Ramzi?

MR. JAMMAL: Ramzi Jammal for the record.

Just to complement Mr. Levine's -- as we concluded yesterday with respect to our engagement with the Indigenous nations, that we did commit to have a systematic approach and proactive approach towards the future. So and one meeting has occurred, as Mr. Levine mentioned. We are going now towards a very much forward engagement so that it's structured and pre-planned and not linked to a licensing or any other licensing activity. So to go and engage with the Indigenous nation so they can understand our role and provide them with any information they require.

With respect to any business agreements, that's between the proponent, which is the licensee, and the Indigenous community, in order to come to an agreement on how they want to do economic element. But our role is to provide clarity with respect to our engagement and the health and safety and engage them with respect to Indigenous knowledge if we need to.

MEMBER SOLIMAN: Do we produce minutes of meeting and as a record for what happened during that meeting and also all the actions. There is minutes of

meeting produced already for that meeting?

MR. LEVINE: Adam Levine, for the record.

So, yes, we did record a summary of the discussions in the meeting and it's something we can definitely provide the Commission for further reference.

THE CHAIRMAN: Dr. Demeter.

MEMBER DEMETER: Thank you. This question is dealing with radiation protection of workers, and I'm referring to Staff slide deck oral presentation, slides 23 and 24. Where slide 23 shows maximum and average radiation doses to individuals since 2009 to 2016, and slide 24 shows two weekly exceedances in each of the years 2015 and 2016.

What I'd like to know from AREVA is their understanding of why the doses are -- there's a trend from 2014 to 2016 to an increase in the maximum worker dose going from 2.03 to 6.94 millisieverts, and to explain what these exceedances are in 2015 and 2016.

MR. HUFFMAN: Dale Huffman, for the record.

First, to address the maximum individual dose as a trend from 2014 to 2015 to 2016. The maximum dose is mostly related to the ramp up of mill production. So we only started receiving ore slurry from Cigar Lake in September 2014, and in 2015 we were producing in earnest, but still ramping up production. In 2016 we were making it

6,700 tonnes at about 18 per cent grade. So the trend there is really reflective of that production increase, but that's where I think we'll level out.

Now, the maximum exposed workers always is sensitive because it's representing one person to perhaps things that that individual is doing in the workplace. But I think, going forward, you'll see our maximum dose in the workplace being around 5 or 6 millisieverts per year.

To address the exceedances. So we had two exceedances in 2015 and two in 2016. All of them were related to -- so categorically, the increase, the dose exceedances are related to dust exposure; each of these individuals who's doing an activity that was dust-creating. Now, we have radiation work permit process in place. On a couple occasions this wasn't well followed and resulted in an increased exposure that month to long-live radioactive dust.

I think on one occasion there was an individual with a respirator being worn at the time. We only take credit for respiratory protection for a factor of 10, indicating that when you're wearing a respirator the dose that's measured on your personal alpha dosimeter is reduced by a factor of 10. We've made application to improve that respiratory protection factor, but at that time that was the value that we were using and it resulted

in an action level exceedance.

I think this is more of an action level exceedance on paper than actual exposure, but that accounts for one of those events.

MEMBER DEMETER: Do you have a sense of this dose -- the percentage of alpha versus external for the general -- like, for the maximum dose people?

MR. HUFFMAN: Dale Huffman with AREVA.

The dose breaks down almost evenly between three components: gamma radiation, so external; and then radioactive dusts; and radon progeny. It's about an equal split for the average worker and then the distribution changes based on a job.

MEMBER DEMETER: Just to follow-up with Staff. Based on this trend and the exceedances, do you have confidence that this is plateauing or do you see this as a trend? What's your sort of, from a regulatory point of view, your oversight at this point?

MS TADROS: Haidy Tadros, for the record.

Thank you for the question. So we have our radiation protection specialist with us here, Mr. John McManus, who can give you his perspective of his review. He is the radiation protection specialist for the file and has been not only following the events and AREVA's response to the events, but has also reviewed their program for its

robustness in terms of response should such things happen.

MR. MCMANUS: Thank you. John McManus, for the record.

Would you like me to talk about the action level exceedances first or the long-term dose?

MEMBER DEMETER: Either. Discuss the trend, and where you expect it to go and where you want it to go and the exceedances, yes.

MR. MCMANUS: Just on face value, the trend initially could look like a concern. However, when you factor in that this is production related, the dose values are actually much less than what were initially anticipated.

In particular, if you look at 2015 versus 2016, the production increased by approximately 50 per cent in 2016, yet the average dose has only increased by about 17 per cent. So if the keep increasing production, we may see some increases in exposure, nevertheless it's not at a level that I think we would necessarily be concerned about.

Throughout the whole process we're always going to make sure that the exposures are being optimized.

MEMBER DEMETER: And the exceedances?

MR. MCMANUS: For all four of the action level exceedances, it's typically -- these things can tend to happen when you're opening up process piping, process

systems. Most of the issues that they've seen since slurry receiving, with slurry line transfers and sparge cleaning, and these are isolated incidents mostly related to human performance deficiencies.

So as a follow-up CNSC inspectors, myself included, did a follow-up inspection in I think it was February of this year and we were really impressed with the amount of observation and coaching that was done as a follow-up. They've also strengthened their work permit requirements which gives them, for these activities, an additional level of oversight. So I'm pretty confident that they've rectified these issues.

MEMBER DEMETER: Thank you.

THE CHAIRMAN: Mr. Seeley.

MEMBER SEELEY: Question for Staff. In light of the discussions we had and conversations yesterday with respect to Selenium and selenium management, including levels, appropriate levels at different points within the process and processed effluent. So my question would be around licence handbook and conditions 9.1 or 9.2. I believe 9.1 would refer more to programs around monitoring. My question is, is it appropriate to include selenium somewhere in those management programs and/or even in licence condition 9.2 where you refer directly to discharge limits. I don't see selenium there presently.

So perhaps if you could comment on including that?

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

I'll pass that on to our project officer who put the licence condition handbook together, Mr. Salman Akhter, for the answer.

MR. AKHTER: Salman Akhter, for the record.

The licensee has a robust environmental protection program which also covers the environmental monitoring program, and the environmental code of practice is part of the bigger program. In the environmental code of practice the licensee has established different administrative levels and action levels, and which CNSC Staff have reviewed and accepted, particularly for the selenium based on the same study, start of the mill, they have established the new administrative level and action level which CNSC Staff reviewed and accepted. These levels will be reviewed on an annual basis to reflect the actual results, monitoring results, of the selenium. Thank you.

MR. DAGHER: Elias Dagher for the record, Environmental Protection Specialist.

I'd just like to add that the new action levels that were established for selenium and the admin

level are based on the newly published CSA Standard N288.8 on establishing and implementing action levels for releases to the environment from nuclear facilities.

Just to add up again, selenium is part of the environmental protection program, it's monitored as part of the effluent monitoring program and also the environmental monitoring program throughout the environment. These programs are also inline with CSA Standard N288.4 and .5.

Regarding the question of release limits, right now we do have action levels that are in place from a regulatory perspective that form part of the licensing basis and we'll continue to monitor them towards the action levels.

CNSC is currently drafting a Reg Doc on controlling releases to the environment from nuclear facilities, and a process for establishing release limits will be included within that.

MR. JAMMAL: Ramji Jammal, for the record.

Sorry, Mr. Seeley, just to add to your point. Your question is -- you're asking the inclusion of selenium or not in the LCH?

MEMBER SEELEY: Yes.

MR. JAMMAL: Yes. The question is very valid, so that's why -- sorry, I'm going to give you a

little bit of "Licensing Basis 101": one, the licensee submits documentation, such as a program. As my colleagues were mentioning, it was done in accordance with the CSA Standards. Those programs become an integral part of the licensing basis, hence the licensee has to establish the program. That's the licensing basis.

Your question is very valid with respect to the LCH. That's why the licence and the LCH itself is in draft form, so we will take the feedback from you, the Commission, and that will incorporate into the LCH. So your point is if we are missing selenium, the LCH will take that into consideration or not consideration, that'll be your direction, and then we'll make sure that is included explicitly in the LCH.

MEMBER SEELEY: Thank you.

MR. LOJK: Bob Lojk, for the record.

Just a clarification. The licensee documents that are part of the program that we regulate against, are outlined in the licence conditions handbook. This case over here, the document that we are regulating them to is the code of practice of environmental protection Version 1, Version 7, which shows up in the licensee document that require notification of change.

So part of the licensing basis is their set of documents and they can't change that document unless

it's agreed to by us, therefore those limits are there. There is no hard limit on selenium, so therefore, as we noted yesterday, there's a program for controlling the releases of selenium, and that's outlined in the acceptable program that we've been working with AREVA to establish, and that is part of the licence control handbook, until there is a fixed number that we can put down, or document.

THE CHAIRMAN: AREVA.

MR. HUFFMAN: Dale Huffman, for the record.

The CNSC Staff had requested that AREVA produce a selenium adaptive management plan. This is something that we have produced and submitted, that describes our management of the selenium issue.

So our understanding would be that upon acceptance of that document it would form part of the licensing basis, be referenced in the LCH. I don't know that it would be necessary to add other language within the LCH proper or the LCH bullet points regarding selenium specifically. I think there's a process established and we're compliant with that, and we've provided the plan that has been requested and it's likely appropriate to include that plan with in the licence basis document.

THE CHAIRMAN: Mr. Tolgyesi.

MEMBER TOLGYESI: Merci, monsieur le

président.

I have two short questions on waste management. In your submission, page 345, this is regarding -- you're saying that it may be necessary to extend industrial landfill or build a new one, because current requirements are stringent and new landfill would be challenging project.

Could you elaborate on that?

MR. HUFFMAN: Dale Huffman, for the record.

When we put together our CMD we followed the format expected for the CMD and listed whatever challenges that we saw coming in the future. We will reach capacity in our industrial landfill and need to extend it. There is a process for doing that. It's mostly a process that involves the province. It's our industrial landfill, contaminated material aren't placed in this landfill, it's not a hazardous waste landfill, it's just for our industrial waste. We go through the process primarily with the province to get that approved.

I don't regard it as a significant challenge, but it's on the list of things that we need to do over the next few years.

MEMBER TOLGYESI: It's not technically challenging, it's maybe administratively challenging?

MR. HUFFMAN: Dale Huffman.

I would agree with that statement.

MEMBER TOLGYESI: My next one is just next to -- is a disposal of sludge. We are talking that is temporary sludge poses challenges, and this sludge is from years -- previous years, mix it with ammonium sulphate solution.

What are challenges in this case?

MR. HUFFMAN: Dale Huffman, with AREVA.

We've accumulated sludge in a pond that is used effectively for surge capacity from our ammonium sulphate crystallization circuit. So we have some sludges that -- the problem for us is that's reducing the capacity of the pond. We want to clean out the sludges and find a final destination for them.

So we're looking at options for managing those sludges. So in relative terms, the contaminant levels, there's elevated ammonia in this material, and what we're likely to do is bring forward an application to dispose of it with our other contaminated and hazardous materials that are going into the Sue C pit. So it's again something that we're going to manage in the next few years. The only problem it's causing right now is it's reducing a capacity of a surge pond that's used occasionally as part of the process.

THE CHAIRMAN: Dr. Soliman.

MEMBER SOLIMAN: This question is for the Staff and for AREVA also.

Graph on page 20 on H9.1B, that graph is giving two lines; one for the annual regulatory limit, and the other one is for annualized regulatory limit, 100 millisieverts per five years. So this is 20, right? It was...

Now, is this limit or target?

MR. HUFFMAN: Dale Huffman, with AREVA.

We'll have to thank the ICRP for creating the confusion on 100 millisieverts limit over five years and 50 in a single year, and we tried to present this on a graph and we've made up this term about annualized limit. It really takes the 100 millisieverts in a five-year period and it divides it by five and presents the 20.

We will limit ourselves to not exceed 20 millisieverts in a year. It's there for presentation purposes, so I'll apologize perhaps on behalf of the ICRP for the confusion.

MEMBER SOLIMAN: My question is, is this a target or limit?

MR. HUFFMAN: Twenty millisieverts a year?

MEMBER SOLIMAN: Yes. Is a target or limit? Because here it says limit, and on the Staff is

target.

MR. HUFFMAN: Dale Huffman, for AREVA.

I think, technically, we would call that a target, because it's not something that we -- we are not limited to 20 millisieverts in a year, we are limited to 50 millisieverts in a year. So it's not a limit.

MEMBER SOLIMAN: So it's a target?

MR. HUFFMAN: So it's a target.

MEMBER SOLIMAN: So what is written on the graph is not correct then?

MR. HUFFMAN: Dale Huffman, with AREVA.

What is written on the graph is not correct.

MEMBER SOLIMAN: Another question on the same graph. On page 6 in the same presentation, total number of employees is 480. On the table on the bottom of the graph, number of NEWS monitored in 2016, 507; in 2015, 508; in 2014, 894. Is the difference between the two is contractors or the number 480 includes the contractors and there's mistake there?

MR. HUFFMAN: Dale Huffman, with AREVA.

The comparison of those two numbers is confused by probably two things. One, would be turnover at the site. So we'll monitor more people with more staff turnover and, secondly, not everybody that works at the

site is a nuclear energy worker. So our employment stats and our radiation protection count of people will differ.

MEMBER SOLIMAN: But should be within the 480, and the difference will be for people who are coming from outside or contractors or...? What is the misleading information here?

MR. HUFFMAN: Dale Huffman, with AREVA. Four hundred and eighty on our initial slide represents the total number of people that work for AREVA. There's a portion of those people that also work in our head office in Saskatoon. So that 480 on our human resources type slide isn't comparable. But we report the number of nuclear energy worker at our McClean Lake facility on the radiation protection page.

MEMBER SOLIMAN: So the number on that table should be less than 480? I just would like to understand. Because this is the same number reported in your table too.

MR. HUFFMAN: Okay. So, yes, I've enlarge this. We're talking about comparing the 507 number to 480?

MEMBER SOLIMAN: Then 2014, 894, much much larger.

MR. HUFFMAN: Yes. So they do also include contractors. So it would be increased by the number of contractors that are nuclear energy worker, and also

increased by turnover at the site; the people that may not have worked a full year and we hired more people. So that's why those numbers are greater.

MEMBER SOLIMAN: So you have trust in these numbers?

MR. HUFFMAN: I have trust in these numbers, yes.

MEMBER SOLIMAN: Okay. That's it.

THE CHAIRMAN: Dr. Demeter...?

MEMBER DEMETER: Thank you.

This is a bit of a new Commissioner question just to give me some confidence relative to the financial guarantee. So the financial guarantee is through an instrument of a letter of credit I understand. The company is divided into three parties, AREVA, Denison and Overseas. There is large foreign ownership. From the staff's perspective I just want some confidence that these other factors, that there's multiple players involved in ownership and that there is a large -- it's a Canadian subsidiary of a foreign company, that these have -- these aren't factors of concern relative to the financial guarantee.

MR. LOJK: Bob Lojk for the record.

You are quite right, there are certain -- the transactions are quite complex and CNSC's legal counsel

is heavily involved in reviewing the letters of credit that were submitted. As mentioned in the CMD, the Province of Saskatchewan holds the letters of guarantee. They are made out to the name of the gentleman that was here yesterday, Tim Moulding. He's charged with picking up those holdings, guarantees and putting them to use. The numbers are so large that various banks, international banks are in fact in charge of it, and they are letters of guarantee that are not based on who the owner or the part owner of the plant is, it's basically letters of guarantee that say that if the plant needs to be decommissioned and cleaned up the money can be drawn from that account. There is an agreement, so it's immaterial who the owners are. The province, for all intents and purposes, is sitting on a pile of money that is a promissory note essentially that is there to be drawn upon if the operators of that plant are no longer viable and can no longer discharge their duties to the province, who is the landowner. There are many ways of -- certain nuclear power plants, they hold it in cash, in their own stocks and bonds and the like, but in this case over here financial guarantees can be accepted by our regulatory document as long as they are properly vetted and the amounts and the placements are in agreement with both the province and us.

MEMBER DEMETER: Thank you. I'm good now,

thank you.

THE CHAIRMAN: Mr. Seeley...? No?

Mr. Tolgyesi...?

MEMBER TOLGYESI: I have one question before -- I have just two. I think it's a typo error in your amendment. One is you were talking about this 20 mSv per year as the annualized regulatory limit on page 3-24 and just the page before you are talking about the annualized regulatory limit of 100 mSv per year. So the 20 is not good because it's a target and 100 is not good because it's not annual.

The other one is on page 4-3 regarding public engagement activities conducted by AREVA where you are saying that the Hatchet Lake First Nation/Wollaston Lake status completed October 11, 2017. It should be 2016, I suppose. Yes, because it was so old -- I mean it was a long time ago. Okay.

My question is about maintenance. On your page 3-19, you are talking about past performance. You are saying that considerable time and efforts were put in inspection and backlog of work required to secondary containment structures. There is no other note about the backlogs. That's one of the key indicators in maintenance. Do you have any backlogs? How do you control them? How do you manage them?

MR. LANIECE: Vincent Laniece for the record.

We have a system in order to manage all our work orders for the mill and mostly for the site, even because we have the surface, the surface group is using the same system, and we are monitoring on a very frequent basis where we are with the number of work orders that we have in the backlog. I am monitoring that myself and as the latest statistics that I collected at the end of April, the backlog that we have right now in our system represents about one month to one and a half months of work for the workforce that we have on the maintenance side up at the McClean Lake site.

MEMBER TOLGYESI: How does it compare to the industry in general? Nobody knows? You know, in your ROR, in your report you are talking about the backlogs. So my question was where do they stand and how do you compare that to the industry in general?

MS TADROS: So Haidy Tadros for the record. And the pause was just a recollection of what we had captured in our ROR with regards to the information that was presented there. So we can definitely provide the Commission with the information as it was presented in our Regulatory Oversight Report.

So as noted, the backlog is something that

we do track and it is a key indicator for us with regards to -- we call it sort of the fitness for service area of the regulatory oversight in our safety and control areas.

And I believe Mr. Salman Akhter can speak specifically to the McClean Lake information, but we will get the information for the ROR in terms of industry.

MR. AKHTER: Salman Akhter for the record.

AREVA has identified safety significant structural systems and competence at the McClean Lake operation and they have implemented a preventive maintenance program. So this program's activities are scheduled, completed and recorded. Staff routinely inspect the maintenance records when they go for the compliance inspections. We also -- the staff also checks a random sampling of equipment maintenance and monitoring records during our inspections and verify if AREVA -- if there is any backlog. If there is a backlog, how they are addressing that and AREVA then takes proper action based on our enforcement guidance.

THE CHAIRMAN: Dr. Soliman...?

Dr. Demeter...?

MEMBER DEMETER: I have one more question. I will preface it with saying I'll -- the advice for the ICRP, I will take it to them because I am a member of it. That's good advice.

I have one request and then I will do my question.

There were copies of information that I thought would have been really helpful that I have seen in other submissions. So when there was a comment about there was 120 reportable events and a number of non-compliances, it would be nice to have in the staff's document a table at the end with a line-by-line summary. I have seen that for some other CMDs. It's just so that we have a sense of the breadth and scope of those. Even though they are of low significance, it gives us some comfort.

And the other piece of information missing was we talked about radiologic concerns for worker health. There is an active urine bioassay for uranium. It would have been nice to actually see that those levels -- I mean they are in compliance and they are low, but it would be nice to actually see the data so that we have some confidence.

The question I have for AREVA is you are a northern community, a fly-in, so tell me what happens if you have a large adjacent forest fire with smoke and you can't land planes. How do you protect the worker safety? How do you get them out of there? What is your plan?

MR. HUFFMAN: Dale Huffman with AREVA.

This is perhaps an element that I didn't

add to Mr. Seeley's question, is that our emergency response teams do integrate with the provincial firefighters and we have close interaction. When there is a fire threat, we are in communication with the fire authorities on managing those risks. And we experienced this challenge in 2015. Though there wasn't a fire concern in the vicinity of McClean Lake, the whole industry was challenged with the forest fire challenge that was in the province and it was very -- it was a good experience to go through because it solidified those connections and how we would work together as a group of mines to make sure that people were safe, make sure we were moving people in and out of the mine site but also back to their home communities, which was the challenge of the time, is not so much making sure they're safe when they landed at work but making sure they were going to a safe place when they landed at home. So we have had some experience in these fire evolutions.

When planes take off -- more specific to your question, when planes take off, they always have an alternate place to land. So if for some reason the airstrip at Points North Landing where we land for the McClean Lake flights was threatened in some way, we can land at Eagle Point, we can land at Cigar Lake. There are alternatives. We can land at Wollaston Post. So there's

always an alternative landing point.

Have I answered your question?

MEMBER DEMETER: You have. I just wanted to get a sense that you have gone through this with -- especially if your La Ronge airport is down because there's a fire by it, it reduces your options for some of the connecting components. It sounds like you have some mutual aid arrangements made, you've got working with provincial emergency preparedness and the fire marshal, so I'm comfortable. Thank you.

MR. HUFFMAN: Yes. Dale Huffman with AREVA.

When we went through that experience in 2015 it really pulled everybody together in all the mine sites and there was a provincial representative. We participated on a phone call every day, sometimes twice a day, looking at managing moving people and supplies in the North. So it was a good -- in the end it was a good experience for our planning purposes.

MEMBER DEMETER: Thanks.

THE CHAIRMAN: Mr. Seeley...?

Mr. Tolgyesi...?

MEMBER TOLGYESI: I don't have a question, I just have one short comment.

On your report, page 50, and this is

Summary of McClean Lake IEMP 2016 Results Chemical Parameters for Food. There are exposure locations, reference location and toxicological reference while using food. Those references are also in milligrams per kilogram?

MR. DAGHER: Elias Dagher for the record.

Yes. When we are sampling foodstuff it's measured -- the concentration of the contaminant is measured in milligrams of the contaminant per kilogram, so per mass of that foodstuff, whereas when you are sampling water it's milligrams per volume, per litre.

MEMBER TOLGYESI: My comment is that when you are looking at that, the toxicological reference value in food, and you observe what's measured, it's such a huge difference. I will tell you, zinc, reference is 30,500 milligrams and the exposure level is 8.5. So the perception of the public is -- if I was native, I'm looking at that, selenium 8.36 -- I'm sorry, selenium is 4.33 and exposure level is .008. So should we worry, should we not worry? Because that is quite different. So am I exposed or am I not?

MR. DAGHER: No. Elias Dagher for the record. I think there is some confusion.

So in the -- during the IEMP sampling campaign two stations were sampled. So one was a reference

station, which is a background station, it's not impacted by the activities of the site. The second station is an exposure station that is downstream of the facility and is impacted by the activities of the site. What you are speaking to is the toxicity reference value and that is a screening. It's a screening level that CNSC has established to compare our monitoring results to and essentially they indicate whether a more in-depth assessment is required. So that value that you are seeing for the toxicological reference value is not a measured value, it's a guideline essentially that we are using to screen the results to.

MEMBER TOLGYESI: It's a guideline, but they are so far apart that I suppose I should be quite sure that even in an exposed location I'm safe, very safe.

MR. DAGHER: Elias Dagher for the record.

I would like to maybe share with you how it's derived. So the toxicological reference values are based on Health Canada's tolerable daily intake rates. So it's the total amount that someone could ingest within a day of a specific contaminant before we would expect any health impacts.

THE CHAIRMAN: Dr. Soliman...?

Okay, I have a couple of comments and I'm just going to make one.

President Binder is fond of saying that the Commissioners read these documents very carefully. I think you have evidence that they read them line by line, if not word by word.

I just have a couple of questions to help me.

On page 3-13 of the AREVA document you talk about a "bow-tie analysis." What is a bow-tie analysis?

MR. HUFFMAN: Dale Huffman with AREVA.

There is a methodology that we have adopted. We are members of the International Council on Metals and Mining. They have a very good document on critical control management and a bow-tie is part of the analysis. What we do is we put the critical event at the centre of that bow-tie and on the left side we take a look at all of the causes that can lead up to that event and we look at the barriers that we need to put in place to ensure safety and to ensure we avoid that critical event. On the right side of the bow-tie we look at, if the event occurred, what measures do we need to have in place to minimize an untoward outcome and we flesh that out. So it's a process, it looks like a bow-tie. So that's a bow-tie.

THE CHAIRMAN: Thank you.

So this is the staff CMD page 15. You are talking about the safety and control areas, and this is just again to help me understand. In facility and equipment you describe physical design as a low-risk ranking. In a facility that is so dependent upon high-volume use of chemicals, intuitively you would think that that would be associated with something other than low risk. So how do you build that definition?

MR. AKHTER: Salman Akhter for the record.

AREVA has a long operating experience and is a mature facility and they have a very good change control and design control plan in place which CNSC staff has reviewed and accepted. They have updated this program as part of the licence renewal documentation and staff has looked and based on our experience with the site, based on that, and we have also provided in Appendix A of the CMD how we come up with the risk ranking. So that's how we assign this ranking.

THE CHAIRMAN: Yes, I think I understand that.

Now I'm going to go back to a comment that Dr. Demeter made and this is on page 18 and 21. This, I have to say, I found frustrating as I was reading through the CMD in three spots. So 3.1.2 discussion, page 18, the inspection report outlines some low-risk deficiencies that

resulted in five non-compliances. The review item identified some minor gaps against the CSA group standards. And then on page 21 you have the same comments, minor deficiencies were identified in the advanced radiation protection. I think if you are going to put in a sentence like that, or a descriptor of a finding like that, it would be really helpful to us to understand an example of what those were. We don't need to see them all but just to give us some context to understand what that definition would be.

MS TADROS: Haidy Tadros for the record.

It's noted, sir. I think that would be at a minimum something that we can definitely include in there. If you would like some detail as to the management system now, we can, but in future I get your point.

THE CHAIRMAN: I just think it just helps us get a little bit more context as we are reading the report, that's all.

MS TADROS: Understood. Thank you.

THE CHAIRMAN: Okay. And then if you will allow me to go back to the 12-year licence period, please.

So the reporting cycle is 2011 to 2015, 2016 to 2020, 2021 to 2025; yes? That means that at the licensing hearing in 2029 the data from that review will be four years old.

MS TADROS: Haidy Tadros for the record.

The data, should the Commission agree to a 12-year licence, will span the 2016 to the 2025 timeframe, plus the information that staff would use to prepare for the licensing hearing, but in terms of the data for the environment from those reports specifically, you are correct, it would span the 2016 to the 2025 reporting period.

THE CHAIRMAN: Does anybody else want to comment? Mr. Rinker...?

MR. RINKER: Mike Rinker for the record.

So in addition to the environmental risk assessment that would come with those reports, we do get annual environmental compliance reporting from AREVA which would inform staff on how the facility is performing.

THE CHAIRMAN: So what is the difference between the five-year review period and the annual reports in terms of completeness of data and ability to see emerging trends?

MR. RINKER: Mike Rinker for the record.

So the trending analysis for example can certainly be done with our annual compliance reporting. It's the monitoring data that we talk about regularly. The difference is there is a re-evaluation of what are the risks associated with that data, so an actual risk

assessment on the impacts to people and to the environment is done every five years. That also informs -- if we find something new, that would inform and help modify what gets monitored and that gets adjusted every five years.

THE CHAIRMAN: I don't think I'm going to push a dead horse, I think I will leave it.

Any other questions from Commission Members?

So I think this comes to the end of the Commission Hearing. Thank you to everybody who has participated and thank you to everybody who has helped put this together.

I think we need to recognize and thank the intervenors in particular, I think that the quality and the involvement of the interventions has been particularly high, and the public also who have attended.

We are very grateful to experts from other ministries who have attended, in particular Mr. Tim Moulding and Ms Brianne England from the Saskatchewan Ministry of the Environment, and Leonard Kaskiw and Karen Coates from the Saskatchewan Ministry of Labour.

Thank you to AREVA and staff for putting together the documentation in a way that was easy for us to follow.

In particular to the Kikinahk Friendship

Centre, this has been I think a lot of work to put up with so many of us over such a period of time. So very great thanks to that and for all your support not only in the last two days but over the course of the week.

And thank you everybody for the two days of the meeting and please all have a safe trip home.

Marc, I think you have closing notes.

MR. LEBLANC: Yes. So I would ask -- I will go with closing notes, but I would ask you to please remain here because Ms Bella Sanderson, an Elder from -- oh, we forgot to give the last words.

THE CHAIRMAN: We did.

MR. LEBLANC: We're not closing yet.

THE CHAIRMAN: We are not closing yet.

AREVA, I apologize. I thought I had done well this meeting. You have the last words.

MR. HUFFMAN: Thank you, Mr. Chair.

I hope that through our submissions in these two days of hearings we have convinced you of the following.

AREVA and the uranium mining industry in general are leaders in the protection of their workers. We achieve low incident frequencies and low radiation doses and we continually improve. We share information so others can learn and make our industry better. We protect the

environment. We achieve low concentrations of constituents in our treated effluent and observed no impacts beyond our lease boundary. We carefully monitor our sampling information and when we observe a negative trend we react to correct our performance.

AREVA sponsors programs to advance environmental science through research initiatives and environmental understanding and confidence through community-based programs. We have an exemplary record of engagement with our stakeholders which shows continual, meaningful and respectful interaction through the life of our project.

We will continue to meet with anyone who has an interest in our project, share information and listen to concerns. Although it is not always possible, we will work hard to align our interests wherever we can. And we work hard to ensure as much positive benefits as possible from our operation is given to the communities near our operation and in Northern Saskatchewan.

We would like to thank our intervenors who have come out both to support us and to challenge us. We are pleased to have garnered the support of several groups who presented over the past two days who each see our operation from a different perspective. When met with challenges, AREVA is pleased to meet stakeholders to better

explain issues and answer questions. There are many issues which arise from an information gap which we are happy to close. Again, we try hard to align our interests, although this isn't always possible.

We appreciate the update from Dr. McLoughlin who has filled an important knowledge gap and shown us that there is a healthy population of woodland caribou in the North, and Mr. Parker's work has reminded us of the climate change benefits of nuclear power and refreshed our understanding of uranium mines' contribution to greenhouse gases.

The AREVA team wants to thank the community of La Ronge and the Lac La Ronge Indian Band for hosting us and showing us their hospitality.

AREVA has requested the renewal of the McClean Lake operating licence to continue to do what we have been competently doing for many years. We have requested a 12-year licence term to both level resources in our organizations and provide intervenors with a more respectful period to review our key performance documents. It is our hope that based on the evidence presented you will grant renewal of our licence.

Thank you, Mr. Chair and Members of the Commission.

THE CHAIRMAN: Thank you and my apologies.

MR. LEBLANC: And mine.

So as I indicated earlier, we would ask everyone to remain because we will have a closing prayer from Ms Bella Sanderson, Elder from the Lac La Ronge Indian Band, after my closing remarks. So we will end in the same way as we started.

So this brings to a close the public hearing.

With respect to this matter, the Commission will confer with regards to the information it has considered and then determine if further information is needed or if the Commission is ready to proceed with a decision. A decision is due before June 30th, so we will advise accordingly.

I will also echo the good words from the Chair because we have several people to thank and to convey to all participants, but also to the technical crew in terms of audiovisual, webcast, transcription services and facilities, the coordination with all the teleconferences, people being able to participate, not being here in the room, the interpreters in several languages with several booths that had to keep up for those two days with what is somewhat technical information.

I would also like to thank on behalf of the Commission the CNSC staff that are here and in

Ottawa -- so this is Ottawa staff, Saskatoon staff, some of them are here and some have participated as you noticed from our offices -- as well as the representatives from the other departments, federal and provincial, for their inputs, and also to Commission Secretariat staff and the security staff for their coordination of these proceedings.

Special thanks to the great staff from the Kikinahk Friendship Centre for their outstanding hospitality. They have gone really overboard to assist us and provide us with all kinds of amenities and flexibility and meet all our special needs. So this has been top-notch in that regard. You made us feel very welcome.

So thank you to all and, as the Chair has mentioned, safe travel. Thank you.

So if you can do the prayer, Ms Sanderson.

ELDER SANDERSON: Good afternoon, everybody. I'm back here this afternoon. I have been gone. I hope you have had an enjoyable two days here and accomplished what you wanted to accomplish and I would like to thank you people for choosing La Ronge to have this meeting.

And I also wanted to tell the prayer in English this time so you will all understand. I like to do some of it when I do prayers, I usually do one in Cree and one in English so people can understand. So I did my Cree

yesterday, I will try my English this afternoon. Thank you.

Our Father who art in heaven, we thank you for this day and we thank you for these people being here. Bless one and everyone that's here and help them go home safely to their loved ones and travel safely until they get home and hopefully they get to meet their loved ones safe and sound. This I ask through Jesus Christ our Lord. Amen. (Cree spoken)

Thank you.

--- Whereupon the hearing concluded at 2:32 p.m. /

L'audience est ajournée à 14 h 32