

I'd like to get staff's comments on that. I mean do we see this with other licensees, where they see this as proprietary information that cannot be shared widely?

MS MURTHY: Kavita Murthy, for the record.

So, yes, to your question, the requirements under the regulatory document RD/GD-99.3 is for licensees to make public their public disclosure protocol. There is not a requirement for them to publish the public information program details. That program is assessed by specialists in the CNSC, in communications. Amy Rupert is here. She will give a more fulsome answer to that.

But closing off, Dr. Binder, on the point you raised about action levels, speaking to the previous issue about effluents, we will present in the regulatory oversight report next year any changes, any updates that are required on action levels, and things that we will be setting as a result of this, of our completed work on effluent limits.

I'll now pass this mike on to Amy Rupert, communications specialist, at the CNSC.

MS RUPERT: Hello. My name is Amy Rupert, senior communications adviser with the CNSC.

As previously stated, Cameco is meeting

the requirement for posting their disclosure protocol. There is no requirement under RD/GD 99.3 to post the program in its entirety; however, we've seen other licensees in the past post summaries of programs documents that are of public interest.

And just to remind the Commission members, or maybe you're not aware, Cameco, in a 2013 community forum, did walk the members in attendance through their public information program and did consult on their disclosure protocol at that time.

At a subsequent community forum, CNSC staff were invited to come to a forum to talk about RD/GD 99.3 and how we assessed the licensees' public information program, and also, in general, how the CNSC communicates. So that was discussed at that point in time.

We would expect -- or we do expect licensees to consider intervenors' recommendations to improve their public information program and to assess the options to address those concerns.

MEMBER VELSHI: Thank you.

Cameco, have you looked at maybe -- you know, whatever you shared with the Commission members, I really can't say I remember it right off the top of my head, but is that something that you have shared widely? I don't know if the intervenor has seen that, that describes

what the different aspects of your public information program are.

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

I'm not sure which document we're talking about, but I can say that, in addition to the public disclosure protocol that is posted on our website, we can look at, as staff has mentioned, providing a summary in relation to the public information program itself that is CNSC staff for acceptance, and look at sharing that more broadly.

MEMBER VELSHI: Does that help you?

MS FEINSTEIN: It would be very helpful to get more information about the whole public information program, and so, yes, that would be helpful. It doesn't address the other concerns that we have about spill reporting or the disclosure of disaggregated data from monitoring reports, and those are with regards to the public disclosure protocol that we have seen.

So we do have several recommendations to make on that point that I would like the opportunity to discuss a little bit more now if that's possible.

MEMBER VELSHI: Yeah, now is a good time then.

MS FEINSTEIN: Okay.

One thing that is clear from the public information program is that Cameco is very involved in the community and engaging in outreach activities that let the public know that there's no risk or give assurances that there's no risk. What Waterkeeper is asking for is more access to the actual data that would support those claims.

One example is some recommendations that we're making with regards to spill reporting, that actual quantities of spills are specific in the reports and that the applicable release limits or action levels are also included on those reports, just so the public can get a sense of the severity of accidents that are being reported, and to ensure that these reports aren't just opaque assurances.

As well, the monitoring data for the site, they are, to some extent, included in annual and quarterly compliance reports, but usually, when Waterkeeper is looking at access to monitoring data, the gold standard is real-time disaggregated data in machine-readable formats. This allows the public to understand in a very real way the actual impacts on the environment, the evidence that Cameco may be drawing on to claim that there aren't any safety risks.

This is especially important not just because it's a general gold standard that industry should

be held to, but also because there are significant -- as we've seen significant emissions concerns at the facility. Ensuring that the public knows how these are being managed and has a very clear idea of the actual impacts of the facility to the environment in real numbers is very important from a public interest perspective.

MEMBER VELSHI: Cameco, do you want to comment on the two areas?

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

With respect to the first area, we are undertaking a redesign of our website and we'll have a new website up in 2017. I think that Cameco's record of transparent public communication has served the company well in relation to the public support that you've seen, and also the employee heartfelt messages that you've heard around both safety and environmental protection.

In relation to the quantities and categorizing, if you look at our incidents that are reported, there are times where we do give more definitive information around quantities, and sometimes we're a little inconsistent in that regard. So an improvement in that particular pieces fits well with the point we've made previously about our desire to continually improve our performance.

With respect to real-time data, I think we see that as being another aspect that we can look at. We're quite comfortable with the aggregated data that's providing that overarching reassurance, as Mr. Feinstein referenced. But we do share that detailed information with CNSC staff, and they review it and comment and provide any follow-up through their inspections or inquiries in relation to that data.

MEMBER VELSHI: Thank you.

So the first one, besides providing the quantum of the spill, I think the recommendation was you also provide your action levels or administrative levels so that one can appreciate how does that compare with. Any comments on that?

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

I think we would look at that where there are applicable action levels to be part of the discourse. All of that goes into the characterization of the environmental incident that's posted on our website.

MEMBER VELSHI: Thank you.

THE PRESIDENT: Staff?

MS MURTHY: Kavita Murthy, for the record.

With regards to spills, the CNSC has a very low threshold for a licensee to report to us on spills

that happen on their site. This licensee has a very strong reporting culture. We do report on spills through our regulatory oversight reports in public meetings.

With respect to monitoring, there are requirements for the licensee to submit quarterly and yearly monitoring reports that staff do an in-depth review of.

With regards to controls and action levels, these are levels that are visible in the licensees' *Licence Conditions Handbook*, and any exceedance of the action level is also reported to the Commission as a part of the regulatory oversight report. In fact, it is also rigged to a requirement that an action level exceedance is reported immediately to the CNSC so we can make sure that the licensee takes corrective actions.

THE PRESIDENT: Thank you.

Mr. Tolgyesi.

MEMBER TOLGYESI: One of the ways to control a release of contaminants to the environment and to the harbour, what's used by Cameco is these pump-and-treat wells, which increase recovery and decrease the release of contaminants to the harbour.

Now what we see is that 2012 to 2014 the ammonia release was increasing. What the staff is reporting on page 29 that:

"... increase in total discharge of ammonia between 2012 and 2014 is attributable to decreases in well production from two wells over the noted time period."

It means that the reduced pumping rate is followed by the increased release.

Now further down you are saying that:

"... loading of COPCs to the harbour from groundwater discharge protects the public and the environment, even when the pumping well network is not operating."

So on one side you are saying that this increase to the release was due to reduced pumping, and on the other side you are saying that even if it's no pumping, the public is protected and the environmental is protected.

Could you comment on that?

MR. McALLISTER: It's Andrew McAlister, director of the Environmental Risk Assessment Division.

The first matter that you raised was related to a performance issue around ammonia that was acknowledged in the report. The concluding statement that we had around the overall risk, that was actually done as part of a risk assessment, where they did look at,

essentially, the pump-and-treat wells ceasing to function, looking at the subsequent impacts to the surface water quality in the harbour, and no adverse effects were identified.

One is acknowledgement of a specific time when the pump-and-treat wells weren't functioning as well, which would point to why the ammonia values were what they were. The second was in a risk assessment context, looking at it more broadly, with halting all the pump-and-treat wells operating and the subsequent impacts, or lack thereof, on the surface water quality.

MEMBER TOLGYESI: Because we are looking at ammonia, it's like this, but it's fluoride and arsenic was also increased, and nitrates, and I'm talking about this pumping performance. So when you are looking at an environmental risk assessment, how does it match with actual performances, because the risk assessment, it was a study which said which are risk and what's potential consequences.

Now here you have something what you measure, which is a performance, actual performance.

How do you relate those two?

MR. McALLISTER: What I'll do is just to maybe frame with the risk part, when we do a risk assessment, or when a risk assessment gets updated, it's

really a very sort of holistic approach. The values that get reported upon in the monitoring, that get reported upon through the pump-and-treat performance are those values that help inform that risk assessment. So that risk assessment, in part, is relying on that information that's generated through the monitoring. It then helps it do the appropriate -- follow the appropriate methodology to subsequently take that information, move it through that groundwater pathway into the surface water environment, and then to look at the subsequent receptors.

So all to say that performance information is some of the data that is being used to inform the subsequent risk assessment, and that will continue to go on as the facility continues. There's going to be continued groundwater monitoring, with a continued evaluation of the performance.

The risk assessment gets updated in a five-year cycle, and so that new information will then be used and brought to bear in the updated risk assessment in the future. It's really a cyclical basis, where we learn from what we have monitored, what we've observed, the science gets refreshed, and all that then gets updated in the risk assessment to look at impacts to humans, impacts to biota to ensure that protection remains.

THE PRESIDENT: But coming back to what

they recommend, that the monitoring of the pump-and-treat system pumping should continue, I assume it will continue. There has never been any question of discontinuing, unless I misunderstood something here. Is that correct?

MS MURTHY: Kavita Murthy, for the record.

It is a licence requirement for the licensee to continue pump-and-treat systems, and any changes they would make would be considered a change to the licensing basis.

THE PRESIDENT: Okay, thank you.

More questions?

Dr. McEwan?

MEMBER MCEWAN: I'm still very uncomfortable at the idea of a licence for a major contaminant, uranium, where we have no idea of what the action level is going to be. I'm really uncomfortable being asked to do that.

You also said, I think, that you have action levels in the *Licence Conditions Handbook*. If I look at the *Licence Conditions Handbook*, you have action levels for air, for uranium and fluorides, and uranium and ammonia. I see no action levels for the single line on the sanitary sewer discharge.

So again, this is using the old figure, but presumably you had an action level at that. If you

did, why isn't it in the Licence Condition Handbook like you said it was?

MS MURTHY: Kavita Murthy for the record.

There isn't a number in the Licence Condition Handbook. What the Licence Condition Handbook is saying is that by December 2016 we will have an established action level.

MEMBER MCEWAN: So you want us to grant a licence for 10 years with no action level defined?

MR. JAMMAL: Ramzi Jammal for the record.

I hear you, and I hear your concern. From regulatory perspective, we have the regulatory limit and then the action levels are determined based on the operational capability of the licensee. So as we are introducing the new load limit and to ensure that the CCME guidelines will be implemented, the proposal by the licensee is undergoing review by staff currently.

So the regulatory limit is the limit that we are proposing for the licence and taking into consideration the action levels by which the operation of the licensee will meet. So we are reviewing the action level that's being proposed by the licensee. Because the action level is an indicator with respect to loss of control. It is not a protective measure. It is an

operational requirement to determine if there is a loss of control to put back the operation within the regulatory limits. So from regulatory limits is the highest level, then action level is based on the operational, and then there is administrative level. So we have the defence in depth with respect to what is the regulatory requirement and what is protective.

So we heard a discussion about the loading of uranium. We fully understand and accept the recommendations arising from the intervenors because it made us look at things in a different way. At no time it was no protection, but there is a difference between the loading requirement, regulatory limits, and toxic limits. So we're looking at what is the lowest denominator and we are going to impose it as an action level, but it's got to be proposed by the operator. And that's where we are right now with respect to the evaluation by the licensee.

The regulatory limit is the protective limit. We have reviewed the regulatory limit to meet the CCME, the Canadian Council of Ministers of the Environment, and then the action level is an operational limitation that indicates under the regulation if there are any loss of control so that the licensee will take actions accordingly.

So there is no missteps with respect to regulatory requirements and the action levels. Once the

action levels are proposed and accepted by the CNSC staff, then it becomes the line by which the licensee will have to report according to the CNSC.

And that's where I'd like to clarify the regulatory limit, plus we have the health limits, the regulatory limits, operation limits, action levels, and the administrative levels. So the defence in depth is being put in place.

We fully accept that if the operation and the best available technology and the capacity of the licensee to go to the lowest level, we will impose it on the licensee based on capacity that we are able to regulate and ensure regulatory oversight based on that action level.

THE PRESIDENT: Do you want to add something?

MR. RINKER: Mike Rinker for the record.

So just to complement that answer, there are action levels, for example, for stack commissions and other releases from this facility. And the operating release limit that was in the draft LCH for the sewer was a dose constraint of 50 microsieverts per annum. So it wasn't the 1 millisievert per annum; it was a fairly constrained value.

We have a proposed action level because we've come up with a new way to establish a release limit

for that facility, and that's why it's interim and we're reviewing it. The new proposed limit of 275 micrograms per litre has to have an associated action level. But that was work that we'd done since the receipt and review of this intervention. And then the final -- so we have something that's interim, but we're reviewing it.

There's also, for information, a CSA standard for the establishment of environmental action levels that has been voted on and passed but will be published not until the winter of this year. And so all facilities will be going through a review and strengthening of action levels for environmental releases.

MEMBER MCEWAN: So maybe I can go back to Waterkeeper, because I think you said that the water quality level was 5 micrograms.

MR. RULAND: That's the Ontario one, yes.

MEMBER MCEWAN: So that's for drinking water?

MR. RULAND: It's the surface water. It's called the Provincial Water Quality Objective, and it's designed to be protective of aquatic life. It's not the drinking water number.

MR. RINKER: Mike Rinker for the record.

So there's a federal water quality objective of 20 micrograms per litre. And there is --

sorry, 15 micrograms per litre. There is a provincial that is an interim number, an older number of 5 micrograms per litre. But the 15 micrograms per litre, the federal number, is more scientifically defensible. The drinking water standard for uranium is 20.

MEMBER MCEWAN: So there's still a big gap between our release limit.

Now, your calculation for the release limit was primarily derived -- radiologically safety or chemical safety?

MR. RINKER: Mike Rinker for the record.

So the initial limit of 1,800 kilograms per annum was based on a radiological number for protection of the workers at the waste water treatment plant, with the knowledge that there would be sufficient dilution that the environment would be protected; however, that wasn't the appropriate place to put the control. We agreed with what the Waterkeeper has suggested, and we've added a 275 microgram per litre at the release point from the facility. It takes into account dilution that would occur before the water would make it to the lake. And so we know with that limit in place that the Canadian federal water quality limit -- or sorry -- for the protection of aquatic life of 15 micrograms per litre would be met with that limit.

THE PRESIDENT: Ready to go? Ms Velshi.

MEMBER VELSHI: I'll start with staff.

One of the other areas of concern raised by the intervenor is around a waste water treatment plan for the Vision in Motion project. So my understanding from yesterday is that the harbour water is part of CNL's responsibility and not Cameco's. So I see a nod. So but it really is the other waste water that will come out. And the comment here is that you don't have a treatment plan for that, or not one that has been shared with the intervenor.

Maybe I'll ask Cameco first. Can you comment on that concern, please.

MR. CLARK: Dale Clark for the record.

So today the water that is generated from that pump and treat system is treated through evaporation. That's a system that's proven, approved, and you know very protective of the public and the environment. And to be clear, in our application and through this process, that is the intent. And so we're not asking for a change in the new discharge method or change in that process.

If there were a change in design or approach at some point in the future, we would certainly go through the applicable federal, municipal, or provincial regulatory processes. We'd follow our public information program to do that.

But to be clear, we're not looking --

we're not asking for a change in that process with this application.

MEMBER VELSHI: So you do have a plan and you've put in limits and what's required under it.

Do you have any comments on that?

MR. RULAND: If there is a plan, it wasn't something that was presented to us.

MR. CLARK: Dale Clarke for the record.

I do understand some of the confusion. In an early application there was an ask for an additional discharge of process effluent. And there's a lot of documentation through this process, so we certainly understand that. In a subsequent letter and correspondence, that request was removed.

So our current plan is based on that method of evaporation, which is proven safe for the public and the environment.

MEMBER VELSHI: Thank you.

THE PRESIDENT: Dr. Tolgyesi.

MEMBER TOLGYESI: During dismantling work and at the site, I suppose there will be an increase in the volume of waste water and also an increase in the volume of contaminants. How the actual pump and treat system will respond? Do you have the capacity? What do you expect will be the increase in volumes? And what do you expect

you will have to add to capacity of pumping to maintain the discharge at low levels?

MR. CLARK: So Dale Clark for the record.

There will be, as part of the Vision in Motion project and as presented in our documents and the presentation and to the community in different forums, there are additional pump and treat wells planned to be installed on that site that enhances the current level of protection and capture of that groundwater that does result in some additional water to be treated. And we will ensure that we have the capacity to do that.

There may be enhancements required for the existing system, but we're certainly capable of doing that. The method of treatment is capable. If there were changes in that method or approach, as I said earlier, we would go through the necessary approval process and public information program to do that, but we're certainly capable of treating the additional water that would result from those additional pump and treat wells through the Vision in Motion project.

MEMBER TOLGYESI: So you will have an additional spare capacity? Because when you look at experience, this pumping between 2012 and '14, there was pumping problems. That's why this ammonia level of discharge was going up. So you expect to have additional

spare capacity to make sure that if something has happened, the pumping system will perform?

MR. CLARK: Dale Clark for the record.

And I can ask my colleagues to add information if needed, but I would clarify or emphasize the actual pumping rates over that time period has steadily increased, and so our ability and our ability to treat and recover that water has steadily increased, and we have demonstrated the ability to operate that system at above the targeted rates. And as mentioned before, those are well above what is required by the risk assessment to ensure the protection of the environment and the public. But we have established those targeted rates. We have been able to operate at greater than those targeted rates.

So yes, we have the capacity today. There will be extra water and necessary extra capacity needed, but we're certainly capable of doing that.

THE PRESIDENT: Questions? Ms Velshi.

MEMBER VELSHI: Staff, the intervenor has made a comment that we need better regulation, better oversight, that not all contaminants of primary concern are being monitored and assessed. How do you respond to that? And is there a way for our regulatory regime to be compared with, say, others for other uranium processing facilities and see does it look similar?

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

I'll just take us back to the environment risk assessment. And how that really unfolds, so to speak, is that really you start off with you're gathering all that available information that's out there on the monitoring information, other information regarding the site, regarding the environment. So you're starting very, very broad with a very large list of contaminants of potential concern. And then you really go through a systematic process to look at what really matters.

And the first part is you do sort of a screening where you would look at -- we've heard mention of different types of guidelines and things like that. That one's almost your first sort of screening, where you look at that and you're able to remove some of those contaminants of potential concern.

And then you go into the more detailed sort of risk assessments, looking at your receptors, looking at the pathways, looking at the uptake of potential contaminants. And it really allows you to focus on those ones that might matter to human health or to aquatic biota. And those results of the risk assessment then are fed into the development of environmental monitoring, the development of effluent monitoring.

So it's really quite a cyclical nature in how it works. So it's, yes, there is reporting on certain contaminants that's of potential concern, but there has been a real systematic process that has allowed them to land on those particular ones that are reported on.

THE PRESIDENT: So can I jump in?

So on page 5, the intervenor lists a list of possible contaminants of primary concern. Are all of these being monitored? Is that the kind of list that you looked at in your risk assessment? What is being monitored? This is page 5.

MEMBER MCEWAN: Of their report?

THE PRESIDENT: Of their report, sorry.

MR. McALLISTER: That's correct. Cameco would be in a better position to confirm that, but those are the ones that are examined, yes.

THE PRESIDENT: But in the ERA you didn't do kind of -- the process you just described is you go, you look at the broad list of contamination.

MR. McALLISTER: That's correct. You would go very broad.

THE PRESIDENT: And then you come down to what's important.

MR. McALLISTER: Correct.

THE PRESIDENT: So are these what's

important, or it's a subset of that? And what is being monitored right now?

MR. McALLISTER: What is important would depend on what, for example, if we're looking in aquatic environment versus a terrestrial environment. But all to say that that is, to the best of my knowledge, a good snapshot of the ones that are important, the ones that have been advanced through the risk assessment for more detailed examination, yes.

THE PRESIDENT: Cameco.

MR. INGALLS: Dave Ingalls for the record.

I can confirm that the list on page 5 -- we do monitor for those items that are listed there. We do focus our reports on specific ones that are our primary contaminants of concern, and those are the ones that are essentially at the higher level that essentially the other ones will follow basically. So we're tracking the ones such as the uraniums and the fluorides. It's considering those other ones because they're all at much lower levels.

THE PRESIDENT: I interrupted you.

MEMBER VELSHI: Yes. I think that I still find a few pieces up in the air. I understand the process you have described. I think it would be helpful to say, Here are the five ones that we felt should be monitored,

and then I guess you guys are monitoring that. And where does this list come from, and why is there a delta. And that hasn't been explained. This could be some legacy stuff that's not relevant to monitor now. I don't know. But we don't have a clear answer on what's being monitored, how does that compare to the list on page 5, and why is there a difference if there is one.

THE PRESIDENT: Go ahead.

MR. RULAND: I just want to say I think Cameco overall, from my perspective, is doing a pretty good job. We had a lengthy meeting with them. I was very impressed by staff and their commitment to progressively improving their facility. I'm not entirely in accord with the monitoring, but my report provides the company with recommendations on where gaps can be closed.

My greatest concern is actually when it comes to regulatory oversight. That I think is where we're failing right now. And you know, these contaminants of primary concern -- this is the list. The only one that's even addressed at all in the site licence handbook is uranium. None of the others are even addressed, but they're there.

And so to me what's missing, on the one hand I've got a company that is certainly doing encouraging things and going the direction they need to be going, but

I'm missing the regulator saying, Okay, here's what you're telling us you can achieve, so here's upper limits on releases from the site. I'm having a problem with CNSC -- a bigger problem with CNSC than I am with the company itself at this point.

THE PRESIDENT: Okay. CNSC and also the independent environmental monitoring, which I thought was measuring a lot of those things. So please.

MR. RINKER: Mike Rinker for the record.

So in general, coming up with a list of constituents of potential concern is something that we have reviewed through the conduct of the environmental assessments for Vision in Motion, through regulatory action.

What is missing in a transparent way is where is the list of things that we agreed did not need to be monitored because they weren't risk significant or monitoring of these other constituents were an appropriate surrogate, much in the way the Port Hope Area Initiative has four key elements that define where low level waste is, despite that we know that there are other characteristics and chemicals associated with that.

One way to move as a regulator, that we have moved towards increasing that transparency, is the CSA standard for environmental monitoring and for effluent

monitoring that has steps to go through to transparently document how that selection process of constituents of potential concern has arrived. And this facility will be compliant with that in the end of calendar year 2017. So they are transitioning into that standard. And I think then improvement in terms of that transparency is there.

But I just want to emphasize that it's only that additional transparency that is lacking and that our oversight and our review of how chemicals of potential concern were selected is something that we've had our technical specialists review many times for this facility over many years.

In addition, I think it's a good point about our independent environmental monitoring program where we do our own monitoring and how we've selected what parameters need to be assessed. And I'll ask Kiza Sauvé to address that question.

MS SAUVÉ: Kiza Sauvé. I'm the director of the Environmental Compliance and Laboratory Services Division.

As Mike Rinker mentioned, through our independent environmental monitoring program, we are monitoring in the water and air and soil, vegetation, contaminants of uranium, fluorides, nitrates, and ammonia. And the results for 2014 and 2015 show that the environment

is protected.

In terms of other environmental monitoring requirements throughout staff CMD we'll see results of uranium and fluoride and nitrate and ammonia throughout the CMD and requirements in the LCH as well.

THE PRESIDENT: So maybe it's not as comprehensive, but that is, in your view, not sufficient?

MR. RULAND: There's monitoring and then there are release limits or action levels, whatever upper bounds on permitted releases from the facility. And the monitoring is pretty good for this facility, aside from the gaps that I've pointed out. It's at the regulatory limits that are being applied that I'm seeing huge gaping holes.

So what I'm hearing here is we're doing monitoring, and I'm glad they're going monitoring. It's good they're doing monitoring. But what I'm missing from CNSC as a regulator are limits on the releases from this facility of different contaminants of concern. And I apologize if I've not been clear enough in really articulating that. I think I have, though.

THE PRESIDENT: But my understanding of what was posted recently about the independent environmental monitoring did have the guidance in them beside the actual measurement. Somebody correct me if I'm wrong here.

MR. RINKER: Mike Rinker, for the record.

So what we provide as a comparison to our independent environmental monitoring are the reference levels for levels in the environment that would indicate safety or protection of the environment, as opposed to the end of stack release limit that I think the intervener is discussing.

So to address that, we do have action levels and release limits for those constituents that have, through a risk assessment, indicated that they would have that potential to pose harm and therefore should be monitored and controlled.

However, we'll be asking the intervener for help next year when we go out with our next version of REGDOC-2.9.1 as a formalized process to establish release limits for all nuclear facilities that may expand -- we'll listen to input on how to expand setting limits for constituents that we would have not monitored or set limits, because they were not risk significant. If there's a transparency or communication exercise that is needed, we'll listen to that.

But I can definitely ensure the Commission that all constituents that are being released from this facility that could have the potential to pose any risk are being monitored and are being controlled and there are

limits associated with those.

THE PRESIDENT: Okay, thank you.

Monsieur Tolgyesi

MEMBER TOLGYESI: One short one. When you're talking about limits, when you're looking at licence conditions handbook on page 52, you are talking about release sources and the limits. It's a UF₆ stack, UF₂ stack, and what are sanitary sewers...

There is no limits or such a thing for groundwater, what's coming out after pumping. You have no limits there. Should there be limits or is it difficult to establish or difficult to control or what?

MR. RINKER: Mike Rinker, for the record.

So we do not have limits for groundwater. In fact, the concentrations and the mass of constituent that is captured in the groundwater, I would say the more that is captured the better, because that means it's an interceptor and it's not being released to the turning basin.

So what's being reported here is really the efficiency of a mitigation system that is collecting contaminants out of groundwater, is going to the evaporator for treatment and management.

What I would think would be important to monitor as a failure of that system would be the quality of

water that is reaching the turning basin itself, and ensuring that the turning basin remains protected now as it has been and post-cleanup under the Port Hope Area Initiative.

So I don't think there should be a limit. This is a measure of its performance and we track it from a trending perspective, year after year we can see, and it's reported in our regulatory oversight reports about how efficient these interceptor wells are performing in terms of intercepting contamination.

MEMBER TOLGYESI: So it's on the goodwill of Cameco if they add pumping or if they will reduce pumping whatsoever?

MR. RINKER: Mike Rinker, for the record.

So it's more than goodwill. First, I would like to start with the turning basin from a uranium perspective and from the constituents that they are capturing has been fairly protective of the environment. There has been marginal exceedances of the provincial surface water quality objective for uranium, as an example.

Nevertheless, under the notion of pollution prevention under the Canadian *Environmental Protection Act*, just because the turning basin is not becoming more and more polluted, does not mean that Cameco should allow it to be releasing the contaminated

groundwater.

So they have proposed to Vision in Motion to do something about that. We are taking regulatory action to make sure that this proceeds and you are considering the application for licensing Vision in Motion, progressive rehabilitation of this site. I can assure you that Environment and Climate Change Canada is very interested to make sure that those releases of groundwater are controlled, as is the provincial government who is monitoring this data. We are to meet regularly to make sure that this continues.

So if Cameco decided to change their will and not treat groundwater anymore, we would step in to make sure that it would continue.

MEMBER TOLGYESI: So you understand.

THE PRESIDENT: Dr. McEwan.

MEMBER MCEWAN: So this is a very simple question. You have data to assure us that, for example, on this list arsenic and radium 226, are not issues?

MR. RINKER: On the issues of groundwater or, sorry, on the issues of controlled releases?

MEMBER MCEWAN: (off microphone) we've had a lot of discussion on ammonium. The interveners have come up with a broader list than that. I think I heard you say you have data to assure us that arsenic, for example, and

radium 226 are not issues?

MR. RINKER: Mike Rinker, for the record.

So I don't want to qualify it as not issues, because there are cleanup activities that are proposed to get fluoride and arsenic contamination that is on, you know, the wall of the turning basin, and it must be cleaned up. But we are aware of what the levels are and we know that cleanup needs to be required.

We are aware of what gets released from the stack and that it's no longer being contributed. As an example, there was a soil plot put next to the facility many years ago that was fresh soil, non-contaminated soil, and that is being monitored to make sure that there isn't any accumulation of releases from the facility onto non-contaminated soil.

So we have a very good awareness of what's leaving the facility and what its impact is on the environment. But we're equally aware that there are areas of the environment in Port Hope that do need remediation and cleanup.

MEMBER MCEWAN: But it is not an ongoing issue where there is an increase in historical --

MR. RINKER: Mike Rinker, for the record. That's correct, it's a legacy issue.

THE PRESIDENT: Anybody else? Anything

else? Okay, you have the final say here.

MS FEINSTEIN: Thank you. I do have four points to make based on my understanding of the questions and answers that were posed at the hearing, and then I have a short paragraph, final statement.

The first point I'd like to make is with regards to our discussions about the involvement of the Department of Fisheries and Oceans in this application process. There's been at least five years' notice that this hearing would take place at this time.

The fact that action levels and the cooling water intake assessment is only going to be assessed a month from now is unacceptable. The memorandum of understanding between the Department of Fisheries and Oceans and the Canadian Nuclear Safety Commission requires that any DFO authorizations or any consideration of fish and fish habitat occur during applications, and that's section 4 of this memorandum of understanding.

Release limits, including the 1,825 kilograms a year uranium limit, as well as the assessment of the cooling water intake reasonably raise the concern of impacts to local aquatic life, and they both require a DFO review. This really hasn't happened for us to be able to assess during this hearing.

We were hearing a lot about an update that

will occur a year from now, and that more information will be available at that update. My understanding is that that update won't be a hearing. I don't know if there's the possibility to add licence requirements at these update meetings.

But if all of the substance on which the Commission has to arrive at a decision is only going to be released a year from now at a meeting, then what's the point of having a hearing now, especially when my understanding of this hearing is that this is the chance that we have to establish licence conditions that will be legally binding on Cameco for the next 10 years?

THE PRESIDENT: So just to correct you on this, the Commission can intervene anytime, anyplace, on any submission. So anytime there is an observation made by anybody to the Commission, it'll be taken into consideration on our own motion, we can do whatever needs to be done.

MS FEINSTEIN: Okay. My understanding is that participant funding isn't the same for meetings, and so there's less of an opportunity for public interest organizations to fully participate and provide expert evidence at those meetings.

THE PRESIDENT: Again, it's on a case-by-case basis, and it doesn't necessarily even apply

to a particular hearing or meeting. You can apply for participant funding, my understanding, you can correct me on this, on any subject at anytime.

MS FEINSTEIN: So we also heard from CNSC staff that it doesn't look as though DFO permits would be required for the facilities, although they've noted that monitoring is a bit unclear and that clarification is still ongoing.

Lake Ontario Waterkeeper is also quite unclear about certain aspects of the monitoring that is to occur with regards to impacts on aquatic life, including the emissions, but also the monitoring of the intake pipe that will occur for the next 10 years to ensure that certain kinds of incidents, like one that occurred last year, doesn't happen again.

So in the environmental risk assessment, there was an incident in which the intake grate malfunctioned and the impingement and entrainment rates were higher during that event, and it was found that a juvenile snapping turtle was killed due to that malfunction, and that's a species of concern.

So there was no evidence that monitoring would continue to ensure such events don't happen again. That's in addition to emissions issues.

So those are the concerns that we have

with regards to the necessity for informed discussions to be having about what kinds of permits are required for this facility. It's the Waterkeeper's view that these types of discussions need to be held during licence hearings so that the findings, at the end of those discussions, will be included as conditions on Cameco's operations.

So that's with regards to the first issue of these DFO authorization processes.

The second issue has to do with the public disclosure protocol. We heard from Cameco that with regards to spill reporting that they are looking to redesign their website this year and that they recognize that an improvement in consistency if spill reporting is required.

Again, this is sort of putting off an important aspect of our intervention in this hearing until next year. With regards to the public disclosure protocols, the recommendations that we're making for the improvement on the protocol with regards to monitoring data being released, we also heard that Cameco will look into the possibility of having real-time data released to the public, real-time disaggregated data.

Again, no timeline for this has been discussed. So I'm thinking about transparency and accountability. I'm not sure where this hearing leaves us on those fronts.

The CNSC and the Provincial Ministry of Environment and Climate Change require specific types of spill reporting. The requirements for that spill reporting is quite clear in the ECA for the facility as well as the CNSC licence. So it's just ensuring that that information, which is already being required by government offices, are also shares with the public. So it needs to be communicated better and should also be enforced as a licence requirement on Cameco. If they're not complying with those reporting requirements, they need to be made to do so.

The third issue regards our discussions about the 1,825 kilogram limit discharge for uranium. It was admitted that this limit took into account the radioactive properties of uranium but not its chemical impacts.

As well, there's a point in our intervention that uranium's really an indicator substance that if such high levels of uranium are being discharged it's very likely that other contaminants of concern are being released in startling numbers.

That brings up the fourth point that I wanted to raise about the discussions that have happened so far in this hearing. There, to my understanding, still isn't a clear list of contaminants of concern that are being monitored, that is publicly available. There aren't

publicly available regulatory limits or effluent limits on those other substances as well. This is still a significant concern for Waterkeeper, a public interest organization, but also for our concerns about the already extremely degraded water quality around the Port Hope Harbour.

The specific list of all contaminants of concern and the corresponding release limits need to be explicitly included in Cameco's licence and environmental monitoring plans. This needs to be shown to the public, that these things are included, that they're being tested for and that there are conditions or that there are consequences for any events in which those limits are not met.

So far, from this hearing, I'm not convinced that that is being done or that there's a strong commitment to ensure that that will be done going into the future.

MR. RULAND: I've just got one minor point to add, and that is when it comes to the regulation of liquid released from this facility. Again, right now we're dependant on the goodwill of Cameco because CNSC is invisible on the issue of stormwater releases from the site.

By the way, if those pumping wells stop

pumping, what happens is the groundwater levels just rise and it runs out the storm sewers. This isn't something that was taken into account in the environmental risk assessment.

But anyways, we have three liquid streams from the facility, only one of them is being looked at by the regulator, and that's the discharges to the sanitary sewer.

Storm sewer discharges are not being considered by the regulator in terms of action levels, nor are the groundwater releases. Cameco models each year what their actual releases are. It would not be a problem to set a limit for CNSC, but it's not being done. To my mind, those are two big gaps in regulatory oversight here.

Thank you very much. I do truly feel we've been heard today, it's been a great opportunity. Thank you.

MS FEINSTEIN: So I can give my paragraph closing statement. The Port Hope Conversion Facility is located in the heart of this community's harbour, embedded in a densely populated town. Many homes, businesses, and important aquatic communities and habitats lie within its 1 kilometre exclusion zone.

As a result, Waterkeeper stresses that it is especially important for the CNSC to ensure that Cameco's Vision in Motion project and its continuing

conversion operations are thoroughly scrutinized to ensure both are undertaken in a precautionary, responsible and effective way.

Fully transparent, accountable, and ongoing communication with the public about the progress of its Vision in Motion project and continuing conversion operations is crucial. These are the ingredients necessary for the facility's social licence to continue to operate in this community, but they're also just as important for Cameco to establish before the CNSC in order for the facility to receive a legal licence from the Commission to continue to operate its facility.

The questions that I raised have not received very clear promises, and so it's important that we've gotten these things on the record.

But I hope that our concerns are considered when we're looking at a 10-year licence term, and whether or not the evidence available to the Commission is sufficient to provide a licence at this time or whether a year interim licence is required in order for us to meet again in a full hearing to determine, at that time, whether or not the Commission can grant a 10-year licence.

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

Before we're going to take a break I'd

like to do one more submission, if you can bear with me.

The next submission is an oral presentation by Mr. Patfield as outlined in CMD 16-H8.25

Mr. Patfield, the floor is yours.

CMD 16-H8.25

Oral presentation by Tyler Patfield

MR. PATFIELD: Good morning, Commission. My name is Tyler Patfield, I've had the privilege in working in nuclear for the last 17 years of my life. I've worked at Darlington Nuclear, Pickering Nuclear, and of course Cameco.

I'd like to start off by saying, we're not perfect, and that's a good thing. In this industry I think room for improvement is crucial. It doesn't matter if you're at Darlington, at Pickering, at Bruce, or at Cameco, room for improvement is absolutely crucial in our business.

It wouldn't matter if we had zero LOPCs, zeros all the way across the board, operating at a world-class standard, demonstrating a top quartile of human performance, we would still strive to do better because that's what this industry demands; everybody working together to achieve better.

So the next question then would be what

are you doing to improve? Well, there's quite a few things in place now that weren't in place a short while ago. We have monitors outside of our lunchrooms to help with zone and contamination control. We have subcommittees composed of people from the floor looking at different areas of the jobs we do to help those jobs become safer and more efficient.

We have adopted the event-free tools into our culture, which are: pre-job briefing; procedural use and adherence; the star principle of stop, think, act, and review; three-way communication and questioning attitude; and, of course, conservative decision making.

We have adopted the five safety basics into our culture, which are: identify the hazard; eliminate the hazard once it's been identified; control it if you can't eliminate it; protect yourself against it; and, of course, minimize the risk to yourself and others.

I think these are great steppingstones to build upon over time to come.

I'd like to switch though now and talk a little bit about my personal experiences with the company as I did in my written submission.

I was four months into the company and my daughter became very ill, she was two at the time. I had to take a week off to help at home. Luckily, she was okay, and

I returned back to work and I was brand new. Seven people approached me on that day and said, "Is your daughter okay? How's she doing?" That hit me here, because I was taken back by the fact that people I barely knew expressed so much concern for the wellbeing of my family.

Being employed longer, I got to see more examples of this, as I said in my written submission. One of those examples that sticks out to me more than anything else, a gentleman, a retiree, lost both of his feet. The site came together and raised enough money for that gentleman to get a wheelchair and prosthetics. Pretty remarkable.

It was even more remarkable when I found out maintenance employees went to his house and built an access ramp so he could access his house with his wheelchair, on their own time and their own merit. Pretty incredible.

I got to see more examples of this kind of behaviour also in celebrating firsthand, that's what I said. We had a baby 17 months ago, the baby was about three weeks old, and two members of my crew showed up at my front door with a present for the baby, a card containing a gift certificate for \$200 for anything the baby needed, as well as a gift certificate for dinner for me and my wife to go out and actually have a bit of time, which I thought was

pretty remarkable.

I've always believed that the company doesn't make the people, the people make the company. I think this embodies the examples of that behaviour, it really does feel like a family.

I think most would agree that within any family there's always room for improvement, but there's also a sacred trust that can't be duplicated.

We strengthen that trust everyday through our: coordinating; our planning; our operators on the floor and their operational experiences and lessons learned; their OPECs new to their language; people that are removing obsolete equipment as part of a cycling up initiative; our storage people that pick the right part for the right job; our delivery people that deliver those parts to the right locations to ensure the work gets done; our yard people that make sure the yard is clear of any hazardous debris, keep the snow removed and, of course, keep the lawns cut so we can safely do our jobs whether we're travelling by foot or, of course, the tailers moving around the drums of uranium; to our janitorial department who are required to clean to Canada Labour Code Standards, but go above and beyond to Nuclear Standards; to our laundry operator who washes every single pair of coveralls everyday and washes and dries and assembles respirators; to

our warehouse people that work hand-in-hand with logistics to ensure the right drum goes to the right location with the right stuff inside; to our maintenance and trades people that give 30 to 40 years in their respective trades providing experience and knowledge that's more valuable than money to the company and the apprentices they train; to our health and safety people that know and ensure we know that no job is too important that we can't take the time to do it safely.

We all work as individuals, as well as a collective, with a common purpose, and that common purpose is to provide power to this province and to do so safely.

You, the Commission and the CNSC, in my interpretation, it's your job to oversee the safe and reliable operation of all reactors and all materials contained within.

If that be the case, it's also my interpretation that you would look to better your standards as well through raising a standard, changing a standard, a procedural revision, through your OPEC's case studies and lessons learned. If that's the case, then there's a big thread of commonality here, isn't there? From our distributors at the nuclear stations to us as the producer, all the way up to our governing, controlling and overseeing authority, the CNSC. That common thread is everybody

working together to achieve better.

You, the CNSC, also have a thread of trust within this family as we have a tread of trust in ours, and that thread of trust is we as a public trust that your rules and regulations and protocols will keep us safe. As a producer and as a nuclear energy worker anew, we trust that your procedures and protocols will keep us safe so we can produce our products. The folks down at the nuclear stations trust that your procedures and practices will keep them safe so they can put the power to the grid and also protect the public at the same time.

It's a big job, big job, and we trust you to do it. Trust us as we continually improve as a producer and do our jobs to keep the lights on in the Province of Ontario, the Country of Canada, and work together to achieve better in powering the future.

Thank you very much.

THE PRESIDENT: Thank you.

MR. PATFIELD: Yes, Sir.

THE PRESIDENT: Questions? Dr. McEwan.

MEMBER MCEWAN: We've heard a lot about the CSSC.

MR. PATFIELD: Oh, I was talking the CNNC --

MEMBER MCEWAN: No no no, no no no,

CMD 16-H8.27

Oral presentation by Bruce Power

THE PRESIDENT: The next submission is an oral presentation by Bruce Power, as outlined in CMD 16-H8.27.

I understand that Mr. Scongack will make the presentation. Over to you.

MR. SCONGACK: That's right. Thank you very much.

For the record, my name is James Scongack. I am the Vice President of Corporate Affairs and Environment at Bruce Power.

I appreciate the opportunity to present to the Commission this morning and share and express Bruce Power's strong support for Cameco's 10-year licence before the Commission.

Before I begin, I think -- you know, I have had the personal opportunity of participating in a number of these hearings and I just want to recognize the role of the Commission. There has been a lot of discussion this morning from other intervenors and in the Q&A sessions on public engagement and transparency and I think these hearings being held in the host communities of licensees is a very important step. It brings the Commission to the

So, you know, certainly from a cost competitive point of view, if the cost of fuel was ever uncompetitive, there would be other options, but I think this has been a partnership that has demonstrated exactly the opposite. We have had very competitive fuel costs. Of the \$65 a megawatt that we are paid for electricity, about \$4.00 of that is a fuel cost. So relative to other sources, that's a very competitive fuel source, although I don't want to give them too positive a message for future negotiations.

--- Laughter / Rires

THE PRESIDENT: Okay, thank you.

Anybody else?

Thank you.

CMD 16-H8.42

Oral presentation by the

Canadian Coalition for Nuclear Responsibility

THE PRESIDENT: The next submission is an Oral presentation by the Canadian Coalition for Nuclear Responsibility, as outlined in CMD 16-H8.42.

I understand we are going to have Dr. Edwards come to us via telecommunication.

Dr. Edwards, can you hear us?

DR. EDWARDS: Yes, I can. I just unmuted my telephone.

THE PRESIDENT: Okay. The floor is yours, please proceed.

DR. EDWARDS: Thank you very much.

Thank you, Commissioners, for giving me this opportunity to say a word on behalf of the Canadian Coalition for Nuclear Responsibility.

We are opposed to the idea of giving a 10-year licence to the Cameco facility at Port Hope given the very checkered history and the fact that there have been some regulatory failures in the past that are very much a matter of public record and that are resulting in a current cleanup activity which is, as I understand it, the most expensive and most extensive environmental municipal cleanup in Canadian history due to errors made in the past.

So to really give a 10-year licence would basically mean that the Commission is not really interested in revisiting this dossier in a public manner for that period of time, for a decade, and it seems to us that this is entirely inconsistent with the fact that this is one of the most affected and impacted communities in North America from the nuclear industry at the front end of the nuclear fuel cycle.

When it comes to decommissioning plans, we

believe that, given again the past failures -- there was, as you Commissioners are no doubt aware, a federal siting task force that was established and operated for three years trying in vain to locate a site anywhere in Ontario that would accept the Port Hope waste, the historic wastes which are now being moved to the Welcome site -- it seems to me that it would be necessarily prudent to require of the licensee a detailed technical and financial consideration of exactly what the total decommissioning of this facility would eventually look like and where those wastes would go since the previous governments have come up empty-handed in trying to find an appropriate site for the radioactive wastes that are now being extracted.

Also, there are many surprises that one has to anticipate in such matters. As we know, there very often are cost overruns in nuclear facilities, as in other planning as well, but in addition, the volume of radioactive waste is often far greater than originally anticipated due to surprises that occur during the actual retrieval of those radioactive wastes.

My understanding is that even during the refurbishment of the Point Lepreau reactor in New Brunswick that they ended up with a volume of radioactive waste which was approximately five times greater than the volume that they had originally anticipated.

So one has to really make plans ahead of time and know where those wastes are going to go and what are the technical and financial aspects that would be appropriate and that would protect the Canadian taxpayer from liabilities in the future.

We know that the Cameco Corporation is currently being pursued in court for a charge of almost \$3 billion in unpaid federal taxes.

We also know that the federal government is cooperating with the Town of Port Hope in a cleanup which has escalated in costs from under \$1 billion to now \$1.2 billion and may escalate further as they are beginning to discover levels of concentration far deeper than were originally thought as well as radioactive properties which are far worse than previously thought.

So the CCNR is recommending that a licence not be granted for 10 years but for a maximum of two years, contingent upon the licensee providing a very detailed and realistic decommissioning plan for the entire complex.

And basically that is our submission.

THE PRESIDENT: Thank you.

Questions?

Ms Velshi...?

MEMBER VELSHI: So a question to staff.

It's the first time we are getting to talk about

decommissioning plans for this facility and one of the requests in front of the Commission for approval is recommending the revised decommissioning cost estimate. So a few questions around that first.

One is maybe you can tell us in more detail why the cost estimate has gone up so significantly.

And the second one, what the intervenor has raised, because I think even in the submission from Cameco it says they don't know where they are going to send their waste, their decommissioning waste. How does that uncertainty get factored in and what's the risk and what are the contingencies built in to address that?

MS TADROS: Haidy Tadros for the record. So I will start off and maybe give a high-level explanation of our regulatory oversight with regards to preliminary decommissioning plans and the regulatory requirements around that and then I will pass it to colleagues in Ottawa, Ms Karine Glenn, who can fill in the details for that.

So currently, as referenced in Cameco's draft LCH, the strategy and the preliminary plan for their activities to decommission are laid out. It is a requirement of the CNSC that preliminary decommissioning plans be updated every five years, and in doing so, the licensee looks at their activities, has a better

perspective of what the activities are, the risks presented, and addresses those updates through an updated preliminary decommissioning plan. The licensee need not wait every five years if there are changes to the activities being proposed. So that can be submitted at any time but at a minimum every five years. And the financial guarantee is adjusted once those plans are better detailed and better known.

So with that, maybe to fulfil on the response that you asked for, I will pass it on to Ms Karine Glenn in Ottawa to identify the current amount.

MS GLENN: For the record, my name is Karine Glenn and I'm the Director of Wastes and Decommissioning at the CNSC.

I will start off by answering your question with respect to the increase in the financial guarantee from the last time the preliminary decommissioning plan was submitted and the current revision.

The difference from the 2010 value to the current value is \$26.9 million and it's identified as follows. It was a shift from stage 1 to stage 2 activities that resulted in an increase of waste that will be shipped to Blind River instead of being transported to the Port Hope Area Initiative long-term waste management facility.

There is also the inflation. So increase in labour rates are responsible for approximately a \$5.3 million increase and the increase in soil excavation required due to changing cleanup standards for arsenic and uranium.

This is partially why we require licensees to resubmit at a minimum every five years their preliminary decommissioning plans as well as the associated cost estimates and financial guarantees to make sure that they are maintained current for the operation and for the plans that they have in place and for the waste inventory that they have as well.

Decommissioning plans are just that, they are a plan and they are meant to be revised and looked at on a regular basis. And the financial guarantee is a basis that in the event that the licensee cannot complete the work -- and to address Mr. Edwards' point, it's exactly to prevent a liability to taxpayers -- that financial guarantee is there should we have to step in and decommission the site tomorrow in the event that the licensee cannot do so. That's what that financial guarantee entails.

The plans are preliminary in that they are done at a level of detail where the major activities are listed, the inventories are listed in terms of waste and they include contingencies in quite a large percentage

because they are preliminary at that point in time.

I'm not sure if I have captured everything that you wanted. If not, I am happy to provide additional information.

MEMBER VELSHI: Thank you. I think you have covered most of what I was hoping to have answered.

You did say that one of the components for the increase was because the waste -- the plan now has the waste going to Blind River as opposed to the low-level waste management facility. So this isn't the legacy waste, we are talking about the decommissioning waste. So you are saying originally that the original plan had it going to CNL's low-level waste management facility and now it's going to Blind River?

MR. INGALLS: Dave Ingalls for the record.

Yes, our decommissioning plan, our preliminary decommissioning plan follows the regulatory guidance documents that the CNSC has provided, and that has been reviewed and accepted by the CNSC.

In terms of the assumptions in that preliminary decommissioning plan, they are preliminary assumptions, and in our current assumptions we are assuming that at final decommissioning those remaining materials at our site will be transferred to a facility in Blind River.

In our past updates of the PDP, when the

scope of the Vision in Motion project was slightly different, there was more waste going to the LTWMF with the PHAI than there is now currently, so that has shifted some of the materials from the LTWMF to a future planned facility in Blind River.

MEMBER VELSHI: Thank you.

Does your preliminary decommissioning plan assume an end of life for the facility or is this anytime it happens, like it would be tomorrow and that's what it would be?

MR. INGALLS: Dave Ingalls for the record.

The preliminary decommissioning plan is based on assuming we are decommissioning tomorrow, so it does not assume life of the facility.

THE PRESIDENT: Is there an end of life in your corporate gossips?

--- Laughter / Rires

MR. INGALLS: Dave Ingalls for the record.

We do not have an end of life date within Cameco. We heavily invest in our site on an ongoing basis and keep it up to current standards and we are committed to the long-term continued operation in Port Hope here.

THE PRESIDENT: Just remind me again. I was under the impression that every preliminary decommissioning plan is to be done by an independent

advisor or expert. Is that correct?

MR. INGALLS: Dave Ingalls for the record.

That is correct, our preliminary decommissioning plan was built, so to speak, by a third party.

THE PRESIDENT: Thank you.

Questions...?

MEMBER TOLGYESI: This decommissioning assurance is composed of what? What's the composition now and could you expect that it will rise, it will increase, it will remain the same way constituted?

MR. INGALLS: Dave Ingalls for the record.

Our financial guarantees that we currently have in place are irrevocable letters of credit from major banks in Canada.

MEMBER TOLGYESI: And it will remain the same way, it will be just a number which will be erased and replaced by the new one?

MR. INGALLS: Dave Ingalls for the record.

That is correct. We will update our irrevocable letters of credit to the revised amount.

THE PRESIDENT: Ms Velshi...?

MEMBER VELSHI: Thank you.

Staff, the intervenor made a comment that for the Lepreau refurbishment project their waste volume

was five times higher than what the original estimate was; is that correct? And maybe you can add a bit more depth as to why, if that is indeed the case, that led to that increase and the implications for Cameco's decommissioning plan of that.

MS TADROS: So the details of your question I believe Ms Karine Glenn in Ottawa will be able to provide.

MS GLENN: Karine Glenn for the record.

We don't have that information right now, but we can definitely get that information for you.

At that time, it is very important to note that, as I mentioned, these are preliminary plans. When Cameco would cease operations and proceed to its end of life plan, at that point they would be required to develop a detailed decommissioning plan and there would be further characterization and survey confirmation that the inventory estimates that were done were correct, though waste volumes that are estimated now are based on the current inventory and infrastructure and the cleanup standards that are in place at this point in time. As I mentioned, because it is preliminary there are contingencies that are built into that.

Also, at the time of decommissioning, when that time comes, Cameco will be required to obtain a

licence to conduct a decommissioning from the Commission and a full assessment would then be performed of those detailed plans.

MEMBER VELSHI: So that's fair enough. I think what I was getting at is what are the learnings from the Lepreau refurbishment, if any, about waste estimates and should that be reflected in the preliminary decommissioning plan for Cameco?

MS GLENN: Karine Glenn for the record.

These are very different situations. The refurbishment is very different than decommissioning of a facility and based on the current facility, again what we know that is in place, the levels of contamination, where they are, surveys, levels of waste that are known. That's what these estimates are based on. It's not exactly a comparable situation.

THE PRESIDENT: Anybody else?

I have one question. So this is the first time I hear that some of the decommissioning material is going to Blind River. To do what? To stay there? To get buried there? I'm trying to understand why you're sending it to Blind River.

MR. INGALLS: Dave Ingalls for the record.

It has been our plan, even in the previous preliminary decommissioning plan, to construct a low-level

facility at our Blind River facility at the time of decommissioning. So it would be similar to a facility for instance that the PHAI is building but constructed in Blind River. That is also captured in the Blind River preliminary decommissioning plan as well.

THE PRESIDENT: So is that why you are so comfortable with the 150,000 cubic metres, because if there is excess over there you can always send a lot of this energy -- send it to Blind River?

MR. INGALLS: Dave Ingalls for the record. That is our plan for the final decommissioning of the facility, that is correct.

THE PRESIDENT: So your plan is still to build such a facility in Blind River?

MR. INGALLS: Dave Ingalls for the record. That is correct.

THE PRESIDENT: Okay, thank you.

Dr. Edwards, you have the final word.

DR. EDWARDS: Well, so the picture is the Blind River community has not actually approved this plan. We don't know whether in fact they are going to be receptive to this idea, because I believe the Blind River community is going to have a say in this, and in the past all the communities that have previously been approached to receive Port Hope waste have refused to do so. So I think

that's one consideration.

Another consideration is that Blind River is right on the north shore of Georgian Bay and so the waters of Georgian Bay would be impacted in the event of any long-term leakage into Georgian Bay.

So there are many questions here. Has the Blind River site actually been approved or characterized as a site for permanent storage of this long-lived radioactive waste material and why is the cost of a repository, if they are planning to build a repository, why is that not included in the decommissioning?

It seems to me that there is a concern here that the CNSC as a regulatory agency is perhaps not looking as far ahead as it should in terms of the public liability, given the fact that this is a private corporation and given the fact that this private corporation, to expect them to cough up a lot more money after their profit-making activities have ceased, that is at the end of life time, seems to me to be a poor way of going about the planning.

Perhaps the whole concept of what the totality of the decommissioning wastes and the storage of those wastes and the location of that site and the acceptability of that site to the residents of the community involved, all of these things should be required

of the licensee to investigate in detail as a way of protecting the public purse from future liabilities which could be very, very high.

THE PRESIDENT: I thought I was going to give you the last word, but I think you have just forced us to have Cameco reply to this.

MR. INGALLS: Dave Ingalls for the record. We will stress that it is a preliminary decommissioning plan, so the plans are not -- the detailed plans are not yet established.

In relation to the facility in Blind River, it is covered in the Blind River preliminary decommissioning plan, the cost of building that facility in Blind River. If that facility was built, it would have to go through any regulatory approvals of the day.

It is captured in the Blind River one because we are owned by the same company, so if we become incapable at the Cameco Port Hope facility to decommission ourselves, that would also apply to Blind River, which would apply to the financial guarantees.

And the other aspect is that the preliminary decommissioning plan for Blind River, which includes the mound that is proposed to be built there, has been shared with both the Mississauga First Nation, which is adjacent to the facility, and also the Town of Blind

River as well.

THE PRESIDENT: Okay. Staff, truly the last word.

MS TADROS: Haidy Tadros for the record. I believe Ms Karine Glenn wanted to respond to some of the intervenor's questions.

MS GLENN: Karine Glenn for the record. I can confirm what Cameco has just stated regarding the Blind River preliminary decommissioning plan and financial guarantee. CNSC staff have been reviewing their revised decommissioning plan and financial guarantee and we confirm that it does include a contingency for the construction of a mound and that the amount -- we are in the process of completing our review, but the financial guarantee will be at an amount sufficient to cover that construction of the mound, including long-term care and maintenance of that facility.

THE PRESIDENT: Okay, thank you.

Thank you, Dr. Edwards.

CMD 16-H8.22

**Oral presentation by the
Northern Ontario School of Medicine**

THE PRESIDENT: I would like to move now

to the next oral presentation by the Northern Ontario School of Medicine, as outlined in CMD 16-H8.22.

I understand that Dr. Boreham will make the presentation. Over to you, sir.

DR. BOREHAM: Thank you, Mr. Binder and Commission Members, for giving us this opportunity to make our intervention from the Northern Ontario School of Medicine.

For the record, my name is Doug Boreham. I am a tenured professor at the Northern Ontario School of Medicine, I am also the Division Head of Medical Sciences, and I am the Bruce Power Research Chair on Radiation Health.

I have with me today Dr. Chris Thome, who is a recent graduate and represents the next generation of radiation biologists. He just got his PhD recently. He has a Master's in Health Physics from McMaster, a PhD in Radiation Biology and now he is running our research programs up at the Northern Ontario School of Medicine.

We are here today to support Cameco's licence renewal for their conversion facility.

Just a real quick thing about Northern Ontario School of Medicine, which I will call NOSM. Awesome NOSM has a vision, which is "Innovative education and research for a healthier North." This med school

started 10 years ago. It recruits students from the North and they stay in the North. And, as you know, Blind River is in the North, so there is interest in good health around Blind River and the surrounding areas.

There are two campuses. One is in Sudbury and one is in Thunder Bay. I am located at the Sudbury campus, but we have a direct fibre-optic link to the West campus, and my faculty and staff meet with me regularly.

Just a quick mention on the Long-Term Energy Plan. We are talking Long-Term Energy Plan. If you look at the Ministry of Environment's document they have just put out -- in fact they are out in the province now doing stakeholder and public hearings on the Long-Term Energy Plan, as you know. I just want to point out that if you look at this, about three pages into it, it demonstrates that nuclear power is a big part of this long-term plan, hence Cameco's importance.

But I find it interesting as a biologist, if you look at the cover, there are lots of things on there, but I don't see the main thing, a fuel bundle or a CANDU reactor, which is kind of interesting. I'm not sure if that's an oversight or an intentional thing, but this is what I deal with when it comes to radiation and nuclear power, and that is that people are afraid of it.

So I am here to hopefully give you some

information on some of the research we are doing that demonstrates that some of the low doses of radiation we are talking about aren't as detrimental as we used to think and hopefully shed some light on some of the discussions that we have had so far on things like microsieverts and millisieverts and milligray and rads and rems and becquerels and try and put some dimension to some of the actual risks of these doses.

So just to start off with, handling uranium right from the uranium mines down to the refinery in the bottom, which is in Blind River, and I hope that that repository doesn't get too close to my golf course which is right there. Then we go to conversion and you can see a picture of me in the top right holding an actual fuel bundle that's ready to be loaded into the Bruce A reactor.

The dose of radiation coming off any one of these steps in the process on contact is what we call 50 microsieverts an hour. I'm holding that thing roughly 1 metre away from me, or if I'm standing 1 metre away from a yellowcake barrel, then the dose drops significantly because of attenuation through air and I'm getting about 5 microsieverts per hour.

That really doesn't mean anything to anybody, because we were asked the question, is that a risk to anybody? So I want to put a little bit more perspective

into this.

At 1 metre, 5 microsieveverts per hour is equivalent to the dose you get from cosmic radiation flying in an aircraft at 30,000 feet, 5 microsieveverts per hour. If you look at the maximum yearly dose of 30 microsieveverts to the public from the conversion facility, it's equivalent to about six hours of flying. I know there is concern in the public about exposing children and other people to radiation when a transport truck goes by or when someone walks by a fence, but in reality if you take your children to Disney World, that's about six hours of flying, they are going to get a whole year's worth of radiation standing at the gate, or at the fence at Cameco. I get a lot more. I put that 2.4 mSv's out there because I do a lot of talks in Australia and I get a lot of dose from there.

I put this slide up to remind people that uranium is everywhere on the planet and this uranium gets into all our food supplies, our water supplies, and there is something like over 3 million metric tonnes of uranium in Lake Huron alone. That means that uranium being everywhere, we have high doses, areas of the world that have higher doses of natural background radiation and I have listed a few here. The world average is about 2. This is what Canada gets, 2 of these mSv per year.

There are places that get greater than 150

mSv a year, which exceeds our legal limits for the nuclear power workers by a long shot and if anyone ever got that in a year there would be some serious consequences in terms of regulations. However, these people have been heavily studied and there is no evidence whatsoever that there are any negative biological impacts from these levels of yearly exposures to these types of radiation in the environment.

So in our bodies, we are radioactive living organisms, we are irradiating people beside us. These are the culprits that get into our body from eating food and drinking water. Tritium is in this drinking water I'm drinking now from cosmic radiation, carbon and potassium from the food I eat. We get tens of thousands of decays of alpha particle every day in our body, we get potassium-40 decay particles, 30 million a day from natural radioactive potassium in our body and 15 million decays of carbon-14. What does that mean? Well, that means we are radiation sources.

So a question came up about what kind of risk is 20 microsieverts of radiation per year? Well, I'm going to put that in perspective. If you sleep with someone on a regular basis, over a year you will irradiate them with about 20 microsieverts of radiation a year and that is equivalent to a hand X-ray. So now you can ask me the question, is that dangerous? And I will say no, that

is not dangerous, because we would all be in big trouble.

Diagnostic radiation is one of the biggest forms of radiation we are going to be exposed to over the next several centuries because the technology is developing, we are using it more and more and more. Sixty million CT scans are done a year, so people are getting exposed to the stuff.

What does a CT scan mean in terms of free radical biology? We have these things called reactive oxygen species we talk about in biology and whether you get a CT scan on the right there and create water in our body to turn into free radicals, which are these little crazy symbols on the bottom here, or whether you are sitting in a waiting room breathing oxygen and your mitochondria are making these free radicals, both these forms of free radical reactive oxygen species will cause DNA damage.

But if you look at it in perspective, a CT scan will give you approximately less than 100 DNA alterations from the scan, and while you are sitting in that waiting room for one hour, your natural oxidative metabolism is going to give you more than 10,000 DNA alterations in an hour. So it's hard to put things biologically in perspective to say a 10-milligray scan is going to have a detrimental effect when I'm getting orders of magnitude more DNA damage just by breathing oxygen.

I would like to turn it over now to Dr. Thome to talk about some of his research that he is doing with his peers and colleagues, because many times I get accused of not having credibility because of my connection with Bruce Power, but you can challenge the students on whether or not they have credibility.

DR. THOME: Most of the research that we are doing is all based on radiation protection to humans and the environment. So we have actually just set up this new centre with the support of Bruce Power and it's called the Bruce Power Centre for Health, Environment and the Effects of Radiation, or BPCHEER. The goals of this facility were to provide independent academic research that we are doing both at the Northern Ontario School of Medicine and with other collaborators at multiple different universities across Canada and across the world. It trains postdoctoral Fellows and graduate students and we are able to use this industrial money and leverage it through peer-reviewed government grants.

So just a few of the streams that are shown here.

We are looking at ultra low doses, so we are doing research down in the Sudbury Neutrino Observatory in Sudbury, which is 2 kilometres underground, and looking at the effects of sub-background exposures.

We are doing environmental monitoring, and this is being run with Dr. Greg Ross at NOSM, looking at mapping of thermal plumes.

We are working with Dr. Tony Hooker in Australia at Flinders University, looking at radon effects.

We are doing field programming with Dr. T.C. Tai at NOSM, looking at what are the effects of exposure to a pregnant female, what are the effects on the offsprings.

And we are looking at environmental effects. We have a whitefish program with Dr. Joanna Wilson at McMaster University and Dr. Chris Somers and Richard Manzon at the University of Regina, looking at the environmental effects of once-through cooling discharges.

So I'm going to really quickly just run through three different results that we have that kind of show that these low-dose exposures, the biological effects in that low-dose region really are a lot different from what we would see at high doses and you really can't extrapolate from those high doses down to the low-dose region.

So this first study was one that we did. We looked at chronic exposure to developing lake whitefish embryos. The lake whitefish is a pretty good model system for looking at developmental effects of radiation. And so

these embryos have an extended development period and they were exposed throughout their whole embryonic development to a chronic low-dose gamma radiation from a cesium source. And we saw that at days 76 and 122, which is about halfway and three-quarters of the way through development, the radiated embryos were actually significantly larger. So that radiation stimulated growth. That's body length is what those graphs are showing compared to an unirradiated control. These are down as low as .06 milligray per day.

We also looked at some foetal programming. So these are mice that were -- the pregnant mother was irradiated and then we looked at the growth of the newborn pups. And we saw that compared to the sham-irradiated ones, mice that the females, the pregnant females received a single exposure of 5, 10 or 50 milligray throughout the growth, the offspring were significantly larger compared to the sham-irradiated controls.

We have also looked at cancer frequency in a cancer-prone mouse model. So this graph is showing the number of lymphoma tumours. So with this mouse model, if you give them a single 4 gray exposure you can induce cancer. And so that solid black line is showing in a mouse that received just a single 4 gray exposure the increase in the number of lymphomas over time. Now, if we take mice and give them that 4 gray exposure to induce cancer, then

if we follow that up with 10 CT scans once a week for 10 weeks, which is similar to what a human would get going for a CT scan, a low dose X-ray exposure, we can actually not only decrease the number of lymphomas that we see in the mice but we can extend the latency period. So these mice are getting fewer cancers and it's occurring later on in life.

So really, what this research is kind of showing is that there is a difference between what's happening at high doses and what's happening at low doses. So at high doses we are really looking at the cellular defence mechanisms, whereas at low doses we are looking at cellular response and adaptive mechanisms that are induced by this radiation. So really, comparing the high doses and low doses is like comparing apples to oranges.

And this is just where we are kind of headed with this research. With the increased technology we have now, we have powerful tools where within a single cell or a single model system we can look at thousands of genes and then up to 60,000 different cellular messages.

And so this graph on the left here is comparing an irradiated cell line to a non-irradiated cell line and looking at -- each one of those dots is a different message within itself and we can look at ones that are up-regulated, which is to the right of the midline

there, and ones there are down-regulated, to the left of that midline. So it's really giving us a lot more powerful tools to look at these effects at the low doses like occupational and medical exposures.

DR. BOREHAM: So we would like to conclude that we support the 10-year licence renewal. This is a recent picture of some of our researchers and collaborators that are working through the BPCHEER program and they are looking forward to another 10 years of good low radiation biology research.

And with that, I will entertain any questions. Thank you.

THE PRESIDENT: Thank you.

I'm sure Dr. McEwan would like to start.

MEMBER MCEWAN: So an interesting presentation. What is the mechanism of the growth increase that you see at low doses?

DR. THOME: So it's really not known. That growth stimulation has been shown previously, so there are a couple of different -- one of the thoughts is that there are some negative regulation pathways that are turned down by that low-dose radiation that prevent an increased growth in the normal organism, but that radiation can down-regulate that inhibitory pathway.

MEMBER MCEWAN: So if I remember the

curves correctly at low doses and dose rates, there is a period where you get -- I think it's called hypersensitivity radioresistance hypothesis. At what stage does the radioresistance hypothesis come in? Is that higher than you would typically see with the experiments you have conducted?

DR. BOREHAM: Yes. The hypersensitivity range that was reported probably 15 or 20 years ago was very specific to certain cell lines, it was never shown in sort of model organisms, and these specific cell lines showed a very low dose, a slight sensitization to that dose. And then immediately following that, when we get into the range of the 1 to .1 milligray range, it starts coming up again and it actually will overshoot and become resistant and then you start your curves. But that's only in a very specialized cell line.

That was brought up at this recent meeting we were at and those mechanisms are still being postulated as being -- the dose of radiation is not high enough to stimulate the DNA repair process. We need to process that low-level radiation. The problem that I have with it is the natural endogenous levels of free radicals are higher than the doses we are giving and, you know, we're talking less than one track per cell and I don't understand the process, but we're showing a lot of opposite effects, like

Chris was saying, the whole stimulation of processes.

There's a lot of push right now to understand the immunology of these types of responses. It is truly amazing to me that a single CT scan can stimulate the immune system to fight cancer. With these new microarray systems, the question you just asked, what was the mechanism, we have all the genes that are -- 67,000 of them. It's going to take a PhD student probably two years to figure out what went on, and then we'll have an answer to one particular scenario that we're testing.

MEMBER MCEWAN: Again, simplistically, the bystander effect, is that, at these doses, a mechanism either enough regulation or...?

DR. BOREHAM: The bystander effect is actually still very active in the sort of risk estimation field. There's a big debate, though, whether or not the bystander effect has a negative or positive impact on the organism. As you know, cells that aren't hit with radiation will respond from cells that were hit with radiation. The whole debate is still out there whether or not that actual mechanism can be used for radiation risk assessment in living organisms. That's another thing we're definitely going to be look at as we go forward.

MEMBER MCEWAN: I guess the final again very simplistic question: is there a tipping point?

DR. BOREHAM: Yes. That's the magic number we're looking for. I have some data that I didn't show that is consistent with the idea that everything below 100 millisievert or milligray does not seem to have a negative biological effect, and everything above -- and we showed with some of our fetal programming that there are negative impacts above 100, say in the 300 range. These are acute exposures. These aren't protracted over a year. I mean we're talking you get a single shot.

The other thing I'd like to throw in there, since I know your love for nuclear medicine, is that we did test the effects of PET scanning, and we showed that the lifetime study for cancer risk in mice, PET scans had no negative effect. In fact, they improved and eliminated kidney disease in the mice. As you know, the kidney gets a larger dose. It's been published, so we can...yeah.

THE PRESIDENT: So did you have an occasion to share this with your friends at ICRP? You've just blown away the linear no-threshold model, right, so why is there no movement to reform all this?

DR. BOREHAM: This is a question you've asked me before, I believe. I can show you a slide that I put up when I worked at AECL, in 1992, that showed where we'd be with the LNT hypothesis by 2010, and the idea was it would be gone. I'm sitting here in 2016, scratching my

head, wondering why are we still talking about this LNT in terms -- it is a useful tool for regulating, in terms of keeping the model simple, but there probably should be a threshold where we just say it's not beneficial, but it's not detrimental, it's not harmful.

Yeah, so I mean we're working on that. That's definitely -- our whole area of research at this new centre is to study the mechanisms of low-dose exposures to cells and systems.

THE PRESIDENT: But you went beyond. You are actually arguing that it's beneficial, so there obviously is --

DR. BOREHAM: Well, I don't know if having bigger offspring is beneficial, but --

--- Laughter / Rires

DR. BOREHAM: -- we have to figure that out. I mean if you like basketball players or football players, I suppose it's a good idea, but we can all that without -- with genetic engineering.

I guess the whole idea is -- we don't know, so we see effects than are different than high doses. We know high doses would reduce growth rate, it would suppress mechanisms that are protective, but we see the opposite at the low doses. High doses are bad for sure, there's not doubt it, and low doses are not doing the same

thing.

What is the mechanism? Well, if a fish hatches earlier or is a little bigger, is that good or bad? Can the fish swim faster and get away from a predator or is it too slow to get to the food? All these questions need to be answered.

THE PRESIDENT: Anybody else?

Did you have an opportunity to study what's going on in Port Hope, in terms of here is an area where you have an environment where there's lots of long-term radiation that's been around...? Is there anything that you can do, I guess it's in any research, that we shed more light on this?

DR. BOREHAM: I shouldn't say this, but depending on the right industrial sponsor...

--- Laughter / Rires

DR. BOREHAM: No, I'm just kidding.

I think it was mentioned last night that it's well-known that the human health effects -- all the studies that have been done -- I think one of the staff had mentioned -- that these things have been studied epidemiology-wise and shown that these pockets or these clusters that happen are random and transient. The fact is that the -- and I think I might have mentioned this at a previous hearing -- the fact is the doses of radiation that

you get in a year here that we're cleaning up are just too low to even worry about biologically.

I mean things are going to happen when we start moving this stuff and creating dusts and creating other sort of hazard, non-radiological hazards. But there's clearly some opportunity that I've heard today, looking at perhaps some aquatic impacts, given our expertise in studying impacts of thermal discharges and things like that.

Combined chemical stressors and radiological stressors, we've done a lot of work on. Chris told me he did his PhD on that, where he looked at some of the combined emissions from the nuclear plant, like hydrazine and morpholine, combined with the heat shocks that you get from the thermal plume, combined with low levels of radiation, and even -- the fact is that all of these environmental levels that are being emitted in the environment, at least in our hands, and with the organisms we were working on, are way too low to even show effects. We have to go to levels a thousand times higher than what's being emitted into the environment to actually see some additive or synergistic effects.

So, again, we can look in the environment, but it's really tough to see things, especially at the micro levels we're talking about that you're regulating to.

I'm convinced you're keeping it safe.

THE PRESIDENT: Mr. Tolgyesi.

MEMBER TOLGYESI: You just said that it will depend on an industrial sponsor.

DR. BOREHAM: I promised I wouldn't say that, but...

MEMBER TOLGYESI: What it mean? To what extent does the sponsor --

DR. BOREHAM: The thing is that -- I guess if you look at it, in the past, when AECL and the government was funding large programs in low-dose radiobiology, and furthermore when the U.S. Department of Energy had a multi-million-dollar program that ran every year, funding specifically low-dose radiobiology with world-class research labs across the United States and the world, all that funding has been cut. It no longer exists.

In fact, I was just working with a group in Washington, D.C. to talk about why the funding was cut to the low-dose research program and why it needs to be reinstated. Right now I Canada, if I write a research grant to NSERC, which basically has a very low success rate, and put the word "radiation" in there, I'm pretty sure I'm going to fail on that. But if I can find industrial partners who have real industrial questions that need to be answered to help the public and the industry

understand: is there impacts and are the impacts?, then the government is more than happy to matching that funding and leverage it, which is why Bruce Power has been a fantastic partner with me.

I've been doing research for 30 years in this: 14 years at AECL, 13 years at McMaster, and I'm now in my fifth year at NOSM, and Bruce Power has been a really good supporter of research for me since about 2004. They sponsored an NSERC Industrial Research Chair, and since then they've allowed me to set up this research chair and centre at NOSM.

And I didn't mention it, but NOSM has a very important role with aboriginal health and francophone health in the north. They've had special mandates, a social accountability mandate, to make sure we do specific research on aboriginal health and francophone health. We've actually just completed a study looking at the differences in immunology in a first nations community and comparing it to sort of another first nations community that's not in northwestern Ontario, and we're finding really interesting differences.

This kind of support is important for the north.

MEMBER TOLGYESI: Is there a kind of coordinating committee where, in addition to you and the

sponsor, there are independent peers who will look after that there is no --

DR. BOREHAM: Yeah. That's an excellent question, and I should have mentioned it. I think Chris might have mentioned it briefly.

Part of the conditions of the funding that Bruce Power wants, and, personally, I want, is to give us some credibility, in the sense that it gets peer reviewed and it's arm's length from industry, which is very interesting, because Bruce Power was very willing to say, We will support this research with our industrial contributions provided that you seek out external funding that matches it. Basically, the research funding I have in Bruce Power needs to be matched by a granting agency that put it through a rigorous external peer-reviewed process.

These are being written by professors and scientists at the universities, or various collaborators, and if they're funded, they've gone through the process of peer review. In fact, when a government agency matches leveraged funding in industry, it's a stipulation that the industry has to sign off on the intellectual property and cannot control the dissemination of that information, which gives it the credibility that Bruce Power needs. They've actually done a wise thing by taking on and adopting that type of process to do research on health and environment.

THE PRESIDENT: Have you checked the Chalk River Laboratories, who is now getting a new mandate and a new research? I don't know if you approached them. Because I think they're also interested in deterministic biological studies of radiation impacts.

DR. BOREHAM: Yeah, and their biological research facility at those labs are world-class. They were built in '97, when I was working there. They're world-class for doing chronic, low-level exposures to animals, like mice and rats and stuff like that. In fact, over the last several years, as you know, that facility has gone through quite a few changes and bumps and hiccups, but now that there's some stability -- I hope they're listening -- I do have some really good ideas for some lifetime studies in that biological facility specifically looking at deterministic effects, such as cataract formation, which you know is a big hot issue right now, and there's a lot of controversy on that.

THE PRESIDENT: Okay, thank you.

DR. BOREHAM: Thanks.

THE PRESIDENT: Thank you very much.

--- Pause

THE PRESIDENT: I'd like to move now to the next submission, which is an oral presentation by the Canadian Nuclear Association, as outlined in CMD 16-H8.34.

I understand that Dr. Barrett will make this presentation.

Over to you.

CMD 16-H8.34

Oral presentation by the Canadian Nuclear Association

MR. BARRETT: Thank you very much, Mr. Chair, and commissioners.

For the record, my name is John Barrett. I'm president and CEO of the Canadian Nuclear Association.

In this oral presentation I'll move a little bit more into the broader -- the public realm of the Cameco work rather than into the specificity that we've just heard.

I appreciate this opportunity to say a few words in support of the application of Cameco for their operating licence renewal and extension.

You have the written comments from the CNA, so I'll just take this opportunity to expand on some of the points addressed in the letter and share with you some of the outstanding initiatives Cameco has undertaken in the areas of safety, health and the environment.

Like all of our members in the Canadian nuclear industry, Cameco is committed to clean, safe,

reliable operation of its facilities. It is continually working towards improving management programs, which include safety programs and environmental stewardship.

Cameco's commitment to excellence in its performance of the Port Hope Conversion Facility over the current licence period demonstrates that Cameco is qualified to carry out the activities as outlined in the licence application. The application and supporting documentation reaffirms its commitment to protect the environment, employees and the public.

It is often said that the best indicator of future performance is past performance, and here, as mentioned, Cameco has an outstanding record. In addition to a number of awards and milestones, as a company, I would like to draw attention to Cameco's use of both external and internal audits, as well as, of course, the inspections conducted by the Canadian Nuclear Safety Commission. These efforts produce finding and recommendations that continually allow Cameco to improve upon its already strong performance.

It's important to note that there are no significant findings identified in either internal or external audits during the current licence period. In fact, over the current licence period, Cameco has formalized and strengthened a number of tools to support

employees and their performance.

They have developed, for example, key work tools to engage with employees, promote awareness, ensure consistency and positive behaviours. These include risk analysis tools, clear work instructions and operating documents, consistent operating practices, such as operator care rounds, daily crew meetings, on-site inspections and job task observations. Some of these were outlined in a very articulate and eloquent way by one of the previous intervenors.

I would like to also draw attention to some of the key environmental improvements Cameco has made in the recent licence period, among them are improvements in emissions reductions, enhancement of groundwater and stormwater protection, and operational reliability improvements.

As with all members of the Canadian nuclear industry, Cameco is strongly committed to protecting the environment. The Port Hope Conversion Facility's environmental protection program meets both the ISO 14001 requirements and Cameco's own corporate requirements.

The environmental protection program identifies all water and air emissions, as well as impacts on land, and all releases are monitored to ensure that they

are well below the applicable limits. No liquid processes effluent have been released into Lake Ontario. Other liquid discharges, such non-contact cooling water, sanitary sewage and stormwater and groundwater discharges are closely monitored.

In the current licence period, a particular focus was the reduction of uranium emissions, and this was achieved by installing HEPA filters and a new tail gas scrubber, which reduced the UF₆ main stack uranium emissions by 50 percent.

Cameco's environmental protection program is audited on a regular basis, and each element is examined at least once over three years. Over 20 audits were conducted in the current licence period, and there were no significant findings.

In addition to the culture of continuous improvements that is the cornerstone of Cameco's operating philosophy, I would like to highlight a major focus of the requested 10-year licence period. The Vision in Motion initiative will make significant improvements to the site. Not only will it make the conversion facility more visually appealing, it will also return the Centre Pier to the community and improve public access to the waterfront. At the same time, the initiative will improve operational efficiency and environmental performance.

Taken together, a major commitment, such as VIM, shows clearly that environmental stewardship and efficient business operations can go hand-in-hand to everyone's benefit. VIM activities also include removing old or underused buildings and removing contaminated soils, buildings and stored waste, and these materials will be moved to the long-term waste management facility being constructed by the Canadian Nuclear Laboratories as part of the Port Hope Area Initiative.

I would like to add that the Canadian nuclear industry sees this strong integrated partnership, which is being spearheaded by two of our members, along with municipalities and other stakeholders, as a model for other projects.

In summary, like all of Cameco's facilities, the Port Hope Conversion Facility is operated in such a way as to ensure both environmental safety and the health and safety of workers in neighbouring communities. In that connection, I might offer an anecdote where I was personally involved in part of that environmental improvement side of Comeco.

In 2015, I was invited to be one of the three judges at the Cameco Environmental Leadership Awards. They started that in 2008, and this was the fourth such gathering. As the name suggests, it's within the Cameco

family, so it includes the mining sites, as well as Blind River and the Port Hope Conversion Facility. Through those leadership awards, the employees are encouraged throughout to offer ideas on any aspect of environmental improvement.

Just to give you an idea of the projects that we were evaluating as judges, we were looking at Cigar Lake materials consolidation, Blind River refinery disposal of sump sands, there was Environmental Awareness Week at Key Lake, and it goes on throughout all aspects of the operations into areas that were quite sort of technically sophisticated, and some of them were just straightforward using common sense, where employees got together to find new ways of dealing with improving the environment.

One that impressed me in particular was where they could use the potable water. The filtration and cleaning of the water from one of the sites of the mines was of such a nature in its cleanliness that they could use that in their industrial processes and didn't have to draw from fresh water. So they reduced the intake of fresh water by using their own recycled water.

But to the point in particular, the grand prize recipient for 2015 was the Port Hope Conversion Facility, with the uranium emissions reduction from tail gas -- and I mentioned that in my remarks -- where they reduced the uranium emissions by 50 percent. This was done

by employee activity and leadership just within the business itself, and we found that very impressive.

The facility plays an important role in supplying the uranium processing services required to produce nuclear fuel for generation of safe, clean, low-carbon, reliable electricity around the world. A previous speaker, James Scongack, from Bruce Power, talked more about how the fuel is used in the production of electricity -- and clean electricity, almost zero-emission electricity.

But, again, on a personal note, I was asked to appear in Quebec at hearings that were conducted by a commission. It was called the Bureau d'audiences publiques sur l'environnement. We just call it by the English acronym BAPE. They were looking into uranium mining in Quebec.

For those who know that background, it was curious for myself to be involved because, having been in northern Saskatchewan, in the mining communities, you saw how important the mining is for the community and the involvement of the aboriginal employees. People have mentioned how Cameco is one of the leading aboriginal employers in Canada, probably the leading, and has won all sorts of diversity awards, and there there's great support for the mining.

Now you move to -- and that's the northern Cree of Saskatchewan, essentially. When you move to Quebec, you also have Cree, Quebec Cree, and they were expressing a lot of concern about uranium mining. Part of it was the radiation, sort of topics that Dr. Boreham was speaking to early, perhaps health impacts, but others more of just an antipathy.

When I asked -- I had an opportunity to speak to some of the Cree elders to find out a little more what was at the root of this, and one of the answers I got back was that, Well, if companies or any business practices come in and don't explain what they're doing beyond the business model, and the jobs created, then the community, which looks at things different ways, don't really understand what's the purpose. Like why are we taking this material out of the ground and mining it? What was the point of it?

So with that, I thought perhaps the presentation that I would make -- and I did, and I think it's worth just repeating here. Because when you step back a little bit and think, why are we mining this uranium and why are we putting it through a conversion facility and fabricating it into fuel? The elder said if there was a way of understanding the health impacts in a positive way, then you might get more attraction, because people would

see that it is contributing to the benefit of humanity.

There I spoke about how you used the uranium. It is mined. It is put into facilities such as the Port Hope Conversion Facility, and the one also in Peterborough. It is turned into these pellets. These pellets go into the fuel bundles, the fuel bundles go into the reactors, and in there you put cobalt rods, cobalt 59 rods. They are then irradiated, you've got cobalt 60, and now you have diagnostic treatment sterilization of all sorts of medical equipment in the hospitals, all the positive health effects.

Now, just recently, Nordion is teaming up with Bruce Power, with the cobalt 60. It will take a year or so to get going, but there will be high-activity cobalt that will now be used in the treatment of cancer, not only detection, but also therapeutics and treatment. Now you see the real health benefits.

I would just like to close on that note, because I think sometimes when we speak about the technical aspects of the environmental protection, so important, and the safety, we need to step back occasionally and say what is the purpose of this? You heard about the electricity side, but I'm also talking about the non-power applications that are so important for humanity.

So let me close with that. The Canadian

Nuclear Association supports the application for a 10-year licence, and I thank the Commission for the opportunity to share these thoughts on Cameco and its licence application.

THE PRESIDENT: Thank you.

Questions?

Dr. McEwan.

MEMBER MCEWAN: So later in this week we'll be looking at the Port Hope Area Initiative report. As you're sort of building your story, how do you create into that the dealing with some of the legacy effects from many years ago? How do you actually articulate both the importance of it and how it happens?

MR. BARRETT: One of the things that has struck me in my involvement in the industry and also earlier when I was acting as Canada's ambassador to the International Atomic Energy Agency is that we have a 60-year history, certainly in Canada, or thereabouts 60 years of working, research, development, technology that we've established, the mining -- we've got the whole fuel cycle, essentially, in Canada. And through that period, of course, it has never been full understanding of all of the effects from the very beginning that may need to have been taken into consideration and further developed.

We heard a presentation on radiation and you see already that there's a type of understanding that

was fairly predominant in the linear threshold approach to it that radiation just -- the more you get of it, the worse it's going to be. And then you have presentations such as Dr. Boreham's showing research is a bit different from radiation.

I think in this case, the understanding of the effects that could come from uranium mining and its transport through into the community, such as this, and used in industrial applications was not fully, fully understood in all its effects.

So my message, then, is one of continual improvement and responsibility. The continual improvement is continuing to research and understand better in order to ensure that all aspects of safety are fully understood and we have a chance to address them and mitigate them. Responsibility is that second point, and that is when you do see an impact, you do something about it and you remediate it and you have the responsibility to do that. So it's a combined thing. Because I don't think it would be honest or fair to say that there's just an understanding that developed in 1950, and now we move on to 2016 and it's exactly the same. So through that period there's the impact of greater recognition, understanding, and application of responsibilities.

THE PRESIDENT: Anybody else?

As an industry association, how do you see your role in terms of dealing with common issues for the whole industry, be it research, be it information dissemination, et cetera. Do you do that or you purely kind of feel it's advocacy and an Ottawa-based kind of a notion?

MR. BARRETT: In answering that question, I think you put your finger on something that is quite important for I think our industry -- I don't know if it applies the same to other industries, but certainly in my observations -- and that is it's a technology that has many applications to the benefits of humanity.

We have on our website a piece that I wrote for another international body and then felt that we should be extolling it more widely. It just simply starts to describe and document the power applications, but the non-power applications were significant. People never realize to what extent in their daily life that they have -- whether it be industrial processes, products and the like, and I mentioned nuclear medicine and treatments and their health -- that are affected by the technology and the materials that go into it. We concentrate on power quite a bit and electricity production, but it's more than that.

And in it, it is not something where

innovation and development and research is something I think left entirely to the industry itself. I think there's always been a fairly close hand-in-glove relationship with the policy directives that address public good and address the greater benefits that one wants to get from these technologies. So it becomes a matter of how do you associate and align the needs of a government that's operating on behalf of a wider public and what the industry can do to satisfy those.

And when you take that perspective, you see that it sometimes goes through different variations over the years. I think what the previous federal government -- there was an interest to sort of we say "restructure" atomic energy and look at it again as to what is the relationship between the commercial business side and the public need. And I don't think that was fully resolved by the previous government. And now a new government's in place and I think it's the same thing.

When you have the political -- the policy objectives of a government that is stressing such things as climate change and environmental impacts and the need for electricity as the basis for development and thinking about northern communities or indigenous communities where there isn't enough energy, all of these things start to come together in a recognition that the nuclear industry -- and

you know I'm using a shorthand, it's much wider -- can actually provide answers to that and can actually start to develop innovatively to address them. But you need to have that kind of understanding, mutual understanding. I don't mean its integration, understanding between.

And that, to answer your question, that's more than advocacy. To me, advocacy is saying, We've got a great product; why don't you buy it? And the way that I see our association is more of governments and others who are seeking solutions to some problems. Let's look at what we have already, let's look at where we could go and how we could develop that in a way that makes sense for the taxpayer, makes sense for the governments. It's doable and it just needs a little bit of that policy -- how shall I say -- openness, open-mindedness.

And I'll just finish on this note, because there are those who do feel that the industry needs to be closed down, essentially, and that it is not needed. And you've probably guessed from my remarks I take the opposite view. I think it's very much needed, such a wide range of activities that are pertinent to our life, that and the quality of life, that we need to keep it. But we need to get it into a frame of understanding so people say, Yes, thankfully we do have a technology. We understand it, and we can apply it to these solutions.

It will not be the only solution. And I'll just close on that note, that -- in responding to this question -- is that the other part of why it's not advocacy, because to me, advocacy can be just like forget about the competitors, just take our product. And our message is there are renewable sources of energy. There are different energy systems. All of them have pros and cons. All of them generate waste; sometimes you don't hear about the waste products of other energy systems.

Clean energy is important. Renewable energy is part of clean energy, but clean energy and clean technology also belong in the sphere of our industry. And we have a lot of potential in that. And so that would be the -- that would again take us away from straight advocacy into a domain -- and I haven't got the right word for it, but I think it is a public good realm.

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

I'd like to move now to the next submission, which is an oral presentation by the Town of Cobourg as outlined in CMD 16-H8.16. I understand that Mayor Brocanier will make the presentation. Over to you, sir.

CMD 16-H8.16

Oral presentation by the Town of Cobourg

MAYOR BROCANIER: Yes. Thank you very much, and thank you President Binder and Members. I want to thank you for the opportunity to make an oral presentation. I did make a written submission, but I also felt it was important to make an oral presentation for the panel to have an opportunity to ask questions of clarity.

So I am Gil Brocanier. I am the mayor of Cobourg, which is eight kilometres east of here, but I'm also warden of Northumberland County. And in my role as both warden and mayor, I'm actively involved in all the businesses and I meet with them on a regular basis to understand both their operation and their needs so that we can work collaboratively to the benefit of business and the community itself.

So Cameco has a conversion facility here in Port Hope and a supporting division in Cobourg. So as mayor of Cobourg, I have an interest that Cameco operates its plants in a manner that is safe to the public, safe to the employees, and also safe to the environment.

So as a former manufacturing quality manager with Kraft Foods Canada, I have a strong background in quality management systems that are necessary to ensure

all of the above concerns are addressed. In addition to this, I was also certified to develop and audit ISO 9000 systems, which is the highest international quality management system in the world. And like Cameco, I was charged with the responsibility of public safety and employee safety.

So since I'm speaking about quality management systems, I wanted to make an oral presentation to make sure that the panel understands there is a big difference between a quality system and a quality management system. Because a quality system is very much focussed on the product quality, whereas a quality management system goes into far more depth than that. And although it does ensure that you will have a high-quality finished product, it is done so by a means of controlling every aspect of an operation from incoming materials to outgoing product, and it addresses the entire scope of employees, from the janitor up to the plant manager, in terms of all of their responsibilities.

So a quality management system is comprised of a documentation hierarchy of all the elements that ensure consistent and effective management and employee responsibilities, including policies, procedures, work instructions, and records.

The policies contain all the guiding

principles of the desired outcome of an organization, and the procedures are the level of documentation that start to add in detail and they clearly describe who does what, when, and how.

So work instructions become the next level of the hierarchy of documentation, and they are all the detailed instructions for every task that has to be completed. These work instructions are not just guidelines, but they are instructions that must be followed exactly, and therefore they form the basis of a fairly high standard of a training program.

And the records that these people keep as they perform their duties are the final layer in the documentation hierarchy and they physically form the largest component of the documentation in a quality management system, because records must contain very detailed recording times, dates, test results, signatures, and any actions that are taken for out of range tests.

And so knowing all of this in my background in quality management systems, I met with Cameco senior management. I wanted to understand that they had all the components of a good-quality management system.

So in my interview with Cameco management, I found that their quality management system parallels the quality management system that I used in the food

manufacturing industry and the ISO 9000 international standard. This ensures their process is fully and consistently controlled, there is a solid understanding of the responsibilities of all employees, their work instructions form the base of an excellent employee training program, and they have the records that prove all of the above.

Now, although my interview was a component audit only, I did discover they do have regular third party audits of their written procedures, work instructions, and records to ensure that the procedures and work instructions are sound and up to date. Training has been conducted, and the records show the process has been properly monitored and controlled.

So even though there are more audits, I found that two of the third party audits for Cameco are the CNSC and the Ministry of the Environment.

So Cameco also conducts regular internal audits which are audits by their own employees who are trained to perform such audits. And so my experience tells me that when an organization successfully -- you know, successfully holds up to those standards of audits, then they are completely in control and they are controlled consistently and to a high level of compliance.

So along with their quality management

system, Cameco is also registered with ISO 14001, which is an environmental component of ISO 9000. This is very specific to monitoring, sampling, testing, and recording of a number of environmental indicators to ensure there is not a negative environmental impact.

So in closing, as mayor and warden, I fully support the relicensing application because of my complete confidence in Cameco's quality management system which exactly parallels the system I used in the food manufacturing business, because it assures me, you know, that Cameco is committed to running an operation that is controlled, safe to the public, and safe to their employees.

Now, I would be remiss if I didn't finish by mentioning that Cameco is a significant contributor to the economy not just of Port Hope but all seven municipalities in the County of Northumberland. And I know that you have many written submissions on Cameco's benefit to the community as a whole, their corporate sponsorship, and I'm not going to repeat all that.

So thank you very much for the opportunity to make this presentation.

THE PRESIDENT: Thank you. Questions?

Dr. McEwan.

MEMBER MCEWAN: Thank you. It was a very

interesting written submission, because you came at it from, I have to say, an unexpected direction, which I guess reflects both background and relationship through the Town and the County.

Were you surprised? Did you go in with any expectations for good or for bad that were changed as you went in? Or did you just go in sort of to learn and find out?

MAYOR BROCANIER: Well, I went in with the hope that I would find exactly what I did find. So I was quite pleased as I went through the whole process and found as I talked about each of the components that are so important to the quality management system that they were all answered in a very positive way. And so you know, as I said, as my experience both as being an auditee on a number of occasions in the food manufacturing business and being an auditor, I followed the process very closely to make sure that I answered -- I asked the right questions to get the answers I wanted.

THE PRESIDENT: When you get fed up with being a mayor, I think I can find you a real good job.

--- Laughter / Rires

MAYOR BROCANIER: I'm having too much fun.

THE PRESIDENT: Anybody else?

You mentioned, and we never talked about,

there's a division in Cobourg itself.

Can somebody tell me in a 10-second clip what does this division do, how big is it.

MR. CLARK: Dale Clark for the record.

So our Cameco fuel manufacturing facility, which is part of our fuel services division, that includes two different facilities. The one in Port Hope, which is under the licence and part of the discussion tomorrow, that's all the uranium processing that takes place, the production of the pellets, and the final fuel bundles takes place in Port Hope. Part of that facility also includes a facility in Cobourg that has no uranium processing. It's zirconium metal-based production, so primarily the tubes that are produced for those fuel bundles are made in Cobourg, as well as a number of other reactor components.

THE PRESIDENT: And how big is it?

MR. CLARK: I believe we have in the neighbourhood of about 100 employees there. We could confirm that tomorrow, but in that ball park.

MEMBER VELSHI: I'll just ask Cameco, so when the mayor of your neighbouring community knocks on your door and says, I want to do an audit of your quality management system, like what's your reaction to that?

MR. CLARK: Sure. Dale Clark for the record.

We're very open. I think it's an example of the transparency that we have, we have made great strides in. And we have great relationships with our stakeholders, with the public, with the community, with the key representatives of our communities, including Mayor Brocanier here. So we're very open, and I think it's an example of the strong support that we have in our community and why we have that support, because we do open our doors and we go to great lengths, actually, to answer questions of interested members of the public, whether that be through the community forums that we do, the presentations to council, the different presentations that we have at the fall fair or other special meetings, or specific requests like this one is another example. So I think it does show that transparency.

THE PRESIDENT: Mayor, do you ever bring Cameco for the whole seven municipalities or to the various councils to get an update as to what's going on in the facility?

MAYOR BROCANIER: Sorry, I just missed that. Could you just repeat that, please.

THE PRESIDENT: Do you ever invite them to bring an update to the current activities in the facility to the council?

MAYOR BROCANIER: Actually, we've never

invited Cameco to do a presentation to the council, although they do make regular public presentations, you know, that are open to all members of council. I get an invitation to them and sometimes I can attend, sometimes I can't because they tend to hold them on nights when I have a council meeting.

THE PRESIDENT: Okay, thank you.

MAYOR BROCANIER: Thank you.

THE PRESIDENT: Thank you for the intervention.

Go ahead. You want to say it?

MR. LEBLANC: So we will resume. We had mentioned we'd take a break at 12:30. It's now 12:30. We'll resume at 1:15 instead of 1:30, and with the presentation by Ms Anna Tilman. Thank you.

--- Upon recessing at 12:32 p.m. /

Suspension à 12 h 32

--- Upon resuming at 1:18 p.m. /

Reprise à 13 h 18

THE PRESIDENT: So we are moving to the next submission, which is an oral presentation by Ms Tilman as outlined in CMD 16-H8.45A. Ms Tilman, over to you.

CMD 16-H8.45/16-H8.45A

Oral presentation by Anna Tilman

MS TILMAN: Okay, thank you very much.
Thank you very much for the time to do this presentation.

I would like to take a couple minutes though at the very beginning, because it was Pat Lawson, who means a lot to a number of us in this community and further, and those of you on the Commission will remember her, I'm sure. Her motto was, "I'll try," and she didn't stop trying.

I knew Pat through our mutual work on the Great Lakes, but mostly because of Port Hope. It was mainly because of her that I chose to focus on nuclear issues, and she was that forceful. I hope I can do justice to her relentless efforts over so many years. With that in mind, I'd like to begin my presentation.

Port Hope's picture here is worth more than a thousand words; not from what we see on the surface, but from what is underneath the surface. It's been the nexus of the radium and uranium refining since the early 1930s, the legacy of the operations for over 30 years lies in the homes, in the school yards, the harbour, the soils, and in its residence, past, present and in the future.

Generations of residents in the Port Hope

area, and the workers, were not initially informed of the radiological hazards they were exposed to. During many years of operation regulatory oversight was missing.

Now plans dealing with the legacy contamination are commencing. Radioactive contaminated materials will be excavated, transported to a former welcome site, new landfill site built for the waste, it's a massive operation. Carrying inherent risks, further exposing residents and workers to hazardous materials.

During Cameco's proposed 10-year licence period massive cleanup and remediation operations are to be carried out, also this waste is to be sent to the same waste site. This is like a double whammy here.

Now, getting back to Port Hope itself and its activities. You're familiar by now with the current activities, the current licence, which is a 5-year licence which is up in February of 2017. I stress this because it's to the proposed new licence. You'll notice in particular the last two bullets, the natural and depleted metal/alloys licence, and the uranium is ammonium diuranate.

As you're aware, the licence request is for 10 years with no change to the production limits. The reference to metals production has been removed, and Cameco has asked for authorization to process and store various natural enriched and depleted uranium compounds as well as

to engage in the cleanup and to seek approval for its preliminary decommissioned plan, a financial guarantee.

Now, as I look through the licence and Cameco's papers I noticed a lack of clarity of information. First of all, I have no idea what the levels of production are or the production rates. The limits of uranium as ammonium diuranate are not specified. So I'm asking really, are there limits? Why aren't they specified?

I'm concerned about the authorization to process and store various uranium compounds. But the metal production facility, as I understand, has been dismantled. Still, there's processing of uranium compounds being carried out. No limits are specified, so I'm seeking clarification. As mentioned, ammonium diuranate limits, which are produced, are not specified.

Now, we come to the story of the legacy waste, which you cannot deal with the licensing without looking at the legacy waste issue. We've got estimates of how much waste there is dating back for all these years, and the long long search to figure out what to do with it, the two facilities that are the result, the new facilities being built right now, the facility at former landfill sites. This has been named the biggest radioactive waste cleanup in Canadian history.

This is very short to give you these are

the two waste facilities; the Port Hope project with the capacity stated, and you'll notice that there is a capacity of 1.9 million cubic metres. The Port Granby site will only store the waste that was originally on the old Port Granby site.

Concerns arise over the work involved in moving this legacy waste. Any excavating dredging transport, no matter what monitoring devices, is bound to release toxins into the atmosphere, into the air, in the water, and so on. This material not only contains radioactive material, it contains heavy metals, asbestos and other toxins.

The workforce dealing with this waste will have to be well-informed and trained to handle this, and it'll take several years to complete. According to the documents, the monitoring of the waste sites will be required for at least 500 years. I would argue, really say much longer.

The costs, \$1.28 billion, a commitment has been made by the federal government a few years ago, but we have no idea if that will suffice. A similar site, Fernald, in Ohio in 2001 was cleaned up at a cost of \$4.4 billion U.S. dollars.

An issue that needs to be realized is the toxicity of the substances that are being emitted. These

are not benign substances, these are cumulatively emitted year after year. Just think how long this facility has been operating and plans to continue to operate. These substances do not disappear. Uranium, in particular, has its issues, but we also need to look at uranium hexafluoride and the other hazardous substances that are stored on site. Not only they're continually being released, there is leakages into the groundwater as well.

Something I find puzzling is safeguards for this Port Hope long-term waste facility. As you're aware, the harbour will be cleaned up, it's supposed to be cleaned up, and the inventory contains a number of drums, as indicated, of historic uranium-bearing waste. These are currently under the International Atomic Energy Agency safeguards, and will continue to be in the safeguards because the quantity is considered too large to ignore.

This makes me wonder what safeguards are in place in Cameco's plan continuation of processing and storing uranium compounds, which does include depleted uranium. I don't know the answer to this, and I'm seeking a clarification.

We've heard about Cup, I now know about Super Cup. Looking at Cup, interesting term, it's going to be another version of a cleanup right on the site. Then there's VIM, the multiyear program. So they've got all this

cleanup going on as well as the legacy cleanup that is going on. That's quite an activity; the cleanup, remediation, renewal, and so on, and the removal of soil.

So multiyear program. I'm not sure if multiyear will be 10 years, will be longer, or what. Originally, there was a 10-year plan, but I'm not sure if that is even feasible.

But at the same time that this is going on, the cleanup and the legacy -- the cleanup at the plant, Cameco intends to keep operating. Now, there's waste produced for every one of these operations, and this is just a list of some of the ways that Cameco intends to "manage" this waste: with metals, ammonium diuranate, which I've mentioned and said to be used in fertilizing; radioactive non-combustible solid waste recycled, and so on. We've heard about waste being shipped to Blind River.

In this particular case, this has been ongoing, it's shipped for incineration. The fluoride by-product, I believe that goes to one of Cameco's mines. Waste materials that can't be processed, are stored on site.

So if these are minimizing waste strategies, there's a question mark and there's a question mark for a reason. Those waste materials that have radioactive elements in them, that meet designated

clearance levels, are considered no longer radioactive and can be free-released, transferred without restriction, or regular control directly to landfills, recycling streams ultimately for reuse into commercial and consumer products ranging from building materials, steel, roads, vehicles, et cetera, furniture.

These policies are permitting manmade radioactive waste to be spread far and wide freely into the open marketplace and into everyday consumer products without public knowledge or consent. It removes the responsibility and liability from Cameco and the government to properly account for and control these releases in the interest of protecting public safety. There's no way of knowing what portion of recycled material contains cleared waste or how much might be in a product.

In other words, these strategies are dispersing waste, they're not really minimizing them, they're sending them everywhere, in different ways.

What is needed is a mass and activity balance to track this waste, account for the amount and activity being produced and marketed. These practices are not in the public interest and are unacceptable.

We come to decommissioning waste and we've heard about the preliminary decommissioning plan, and there's been questions on the decommissioning plan as such.

As it continues to operate for another 10 years, proposes, it will generate more waste. Cameco itself, has been already mentioned, has found that it finds it a challenge to find a viable low-level waste management facility.

I don't think a company should be allowed to continue to produce waste and not know what to do with it. What are the amounts of low-level radioactive waste or other non-radioactive decommissioning wastes projected to be? How does Cameco plan to manage the plant? Without clarity on waste, they should not get a 10-year licence at all, by any means.

Change of topic. I tend to look at air emissions and standards and so that are set by CNSC, the derived release limits and so on. This is directly from that material. These are annual release limits of specific elements; uranium fluoride and so on, and kilograms per hour. You'll notice on the right side the licence limit, you'll notice the range of emissions, which are magnitudes lower in the cases of the first few. Then what the derived release limits are.

A further glance through the licence control handbook has revealed something interesting. The proposed licence limits for the UF_6 plants are to be reduced from .29 to .28 kilograms per hour, not a great difference. However, the uranium dioxide plant will be increased from

what it was originally to .24 from .15. There's no explanation as to why the DRL, the derived release limit, has been increased for the UO_2 , so I'm asking for explanations on that.

There's also action levels set by Cameco which means the need a report, it doesn't a legal status, they're somewhat more stringent but they need a report.

Now, going back to the other slide a minute. I have no idea, I can't relate this data to anything in particular, these emissions. I don't know what the production levels are. I don't necessarily assume they're the same year to year or month by month, as they're given in various grafts. So I can't relate it. Is the DRL related to the maximum amount of production?

So you can't compare, neither can Cameco state or CNSC staff state in its report these are well well below. Sure, they're well below, but how relevant are they? What production is Cameco doing for UF_6 and UO_2 ? I mean, when you see these numbers you wonder, either they're so clean -- if they're so clean then why are the licence limits so large? If they're not so clean, then let's find out if they're producing much less. What us going on? We need a rate, a production rate. So I can't compare or analyze this data.

Now, I come to the concluding remarks,

which I'm sure you can see very clearly. When we consider the legacy of waste, the ongoing pollution that will continue to be generated by the operations, continuing the operations. Granting the licence for 10 more years is an unacceptable term length.

So there's a couple recommendations and there's more. First of all, Cameco -- we're requesting that the Tribunal reject Cameco's application for the 10-year period. Instead, we would recommend that the CNSC limit the licence period to no more than three years, and during that time require Cameco to prepare detailed decommissioning plans toward its inevitable closure.

One major reason, it's been mentioned before, a 10-year licence is unacceptable, it does not allow for public review of the operations and the cleanup operations. These recommendations are unequivocal. I can't imagine a project of this size being able to continue without outside inspections coming in, without a public review. I can't expect this to continue without delays when you talk about the work that's involved.

So thank you.

THE PRESIDENT: Thank you. Questions?

Dr. McEwan?

MEMBER MCEWAN: So I'll start with a simple question because when I reviewed the -- I had the

same question as you.

So your slide 16. Why is the fluoride release limit increased? I noticed that as well, particularly as the releases -- as the air emissions have not changed over the course of the last four years.

MR. INGALLS: Dave Ingalls, for the record.

If you're referring to the table on page 16 there, the fluoride emissions from the UF₆ stack that do fluctuate slightly from year to year, mostly based on our production values that we --

MEMBER MCEWAN: I'm not saying that they have changed significantly. What I'm saying is the licence limit has increased.

MR. INGALLS: Okay.

MEMBER MCEWAN: And I don't understand that in a change in the release -- in what is actually released.

MR. INGALLS: Okay. Dave Ingalls, for the record.

I'll just rephrase the question and make sure I understand the question. So I believe you're referring to the revised licence limit for the UO₂ plant that increased to the .24 kilograms per hour in the licence limit based on the updated DRL.

So we discussed earlier that every five years we update our derived release limits for the facility and, in fact, the actual release limits have not changed. The derived release limits are based on .3 microsieverts total dose to the public with a component of our emissions at 0.05 microsieverts per year from our emissions.

When we redid the modeling this year, there were a number of changes that took place when we updated that model. In particular, what changed when we did that model was the -- we had a number of old sources that were included in the previous model that had emission points, for example, the old UO₂ operations which we're requesting to be removed from our operating licence, as well as metals plants operations.

In addition, there was also some changes to the receptors as well.

When you take all of that into consideration and what the dose limit would be to a member of the public, that does allow some changes to the existing emissions from our operations as other facilities have now been removed.

The DRL is a science-based document. We're following the applicable standards to develop those derived release limits, and we believe that by following the science in the regulations, they are, by default, then

very protective of human health and protection of the environment.

MS TILMAN: Sorry. I don't think that explained at all what the discrepancy is.

Right in the licence handbook, it reflects this increase from .15 to .24 kilograms per hour. That is a significant increase.

THE PRESIDENT: Okay. Let -- CNSC are yelling and screaming over there trying to answer.

MS MURTHY: Kavita Murthy, for -- okay. Go.

MR. RINKER: Mike Rinker, for the record.

So I'm going to ask Mr. Mike Jones to explain our review of the change, but I wanted to make sure that what did not change was that the releases are still required to provide a dose of less than 50 microsieverts per annum, so the target of what that release limit would be has not changed. What changed is, as we revise the model with new science and new analysis, the amount of uranium that would cause that dose of 50 microsieverts per annum has changed.

And I'll ask Mike Jones to address how that happened.

MR. JONES: Mike Jones, Environmental Program Officer, for the record.

Just to clarify, the fluoride release limit has not changed. The one that has been revised is the uranium release limit for the UO₂ plant, and similar to what's being said, both in the current licensing period and a future one, the limit is based upon a dose to the public of 50 microsieverts, which is 20 times less than the -- than the regulatory limit of one millisievert.

The derived release limit document was submitted by Cameco and reviewed by CNSC staff and found to be acceptable. It followed the guidance of the updated CSA Standard N28.1, which is guidance for calculating derived release limits, and the differences in the model are that the new derived release limit report resulted from updated receptor scenarios, consumption rates, exposure factors and dose coefficients that were used in the assessment.

And the result was a number which was higher than originally, but still corresponds to an annual dose of 50 microsieverts and, at the same time, the action level is not being changed, so the action level is based upon the actual performance of the facility, and that still adds seven grams per hour, which would provide a warning if there were any deviations from the normal operating releases from the facility.

THE PRESIDENT: I think that now is maybe a good time to invite our colleagues from Ministry of

Environment of Ontario.

I hear that they are here. Welcome.

And you know, some of those limits we are talking about, and that's the confusion, are still based on radiological, and we've talked about the toxicity level, and I don't know where one should use one or the other, so there's work to be done about clarifying this.

But from the Ministry of Environment and Climate Change, I would like to hear your view about some of the regulatory oversight you do with respect to some of those releases by Cameco.

MR. BRADLEY: David Bradley, for the record, from the Ministry of Environment and Climate Change.

I'll start out, I guess, with releases from the facility. So we do have an environmental compliance approval that is issued to Cameco, and we undertake regular reviews of those reports. And our most recent review indicates that they are in compliance with our regulations under the *Environmental Protection Act* in relation to air emissions.

We also regulate storm water discharges as well as process effluent discharges. We issue what are called environmental compliance approvals under the *Ontario Water Resources Act* for those discharges.

We review the information that we receive from Cameco regularly and we assess potential for environmental impacts or human health impacts.

We also review -- you know, we're aware of the groundwater contamination issues on the property at Cameco, and we are in regular communication with the CNSC staff and with Cameco regarding the operation and control of their pump and treat system and of the control measures that are in place for controlling groundwater discharges to the harbour, and we provide regular comments and recommendations back to Cameco regarding those treatment systems.

I think that's about all right now.

THE PRESIDENT: Thank you.

Dr. McEwan.

MR. RINKER: I did want to interject, particularly with the province here.

There's been discussion about are we providing adequate protection for the chemical nature of uranium and the radiological nature of uranium and how does that relate to effluent limits, to air in particular. And what's important to understand is the context of the uranium and air standard and ambient air that is a provincial standard that we've incorporated into our regulations.

And it was put into force in 2011 with a five-year transition period, so in 2016, although we've been reporting against it for the last five years, it's now into force in 2016.

During the development of this standard, Ontario Standards Branch considered uranium to be completely soluble, 100 percent soluble, so when you inhale it into your lungs, it dissolves into your blood, and the end point was kidney toxicity. So the standard was developed based on the toxicological nature of uranium.

When Health Canada did a review of the proposed standard, Health Canada considered knowing that uranium as it goes through the fuel chain changes form physically and chemically and becomes less soluble, so they assumed it's 100 percent not soluble. When you inhale it, it stays in your lungs and poses a dose.

And then, when the CNSC technical experts looked at this standard, we reviewed it in the context of uranium releases would go into the environment, they would land on the soil and accumulate in the soil and infants would be playing in back yards consuming in the most exposed area, ingestion of soil.

And all three technical departments came to the conclusion that the standard that is being proposed by Ontario would be protective of those three scenarios.

So the uranium ambient air standard of 0.03 micrograms per cubic metre which Cameco conversion facility is meeting and has been meeting for many years is protective of the radiological consequences, chemical consequences and, if it accumulates in soil, ingestion.

THE PRESIDENT: Just to finish on that, somewhere in your document somebody should explain. This is a pretty complicated story you just told, and relationship both radiological and toxicity and impact on the body, if you like, is not obvious in reading some of those documents.

MEMBER MCEWAN: I would like to echo that. It's totally not obvious.

You also, in -- of the -- staff CMD on page 46 say that Cameco also identified action levels. You don't mention the action levels anywhere in the document.

So again -- and to be honest, if I'm a member of the public reading this, what I am seeing is a random increase in the derived release limit. The justification you have given doesn't even begin to mirror what you said.

And I do think that there is an issue of raising a release limit in the public perception. I think it is very, very difficult to explain in clear terms that a lay person can understand exactly what has happened there.

MR. RINKER: Mike Rinker, for the record.

So I think that's a fair point. I would note that the document -- the CSA Standard for which derived release limits are based on, there's a model to follow, is revised every five years taking into account new science.

Some -- and when a new revision comes, we expect licensees to reapply the model. In some instances, it results in a slightly lowering of the amount of constituent that would be released and, in this case, it's raising of the amount of -- of the constituent that would be released.

But in the end, I think what's important to acknowledge is that we've improved our understanding of the science, but the result is the same level of protection of, in this case, 50 microsieverts per annum, which has not changed.

THE PRESIDENT: Ms Velshi.

MEMBER VELSHI: And I really want to echo what Dr. McEwan has said, especially when you come requesting approval to increase a limit, the least that can do is what's the justification for it. So I think there's enough said on that.

The other question that the intervenor has raised that we discussed yesterday was this lack of what

your production levels are, and Cameco gave their reason why they don't provide it.

So is that information provided to staff in the quarterly or annual compliance report?

MS MURTHY: Kavita Murthy, for the record.

Yes, it is. We do have that information, but it is marked as protected confidential.

MEMBER VELSHI: And so when you do your review and your assessment and you look at the performance in saying, okay, so the emissions have come down, but is that because of production or improved performance, clearly you look at all that.

And it wasn't clear in the information provided to us -- in fact, from the information provided to us, there was no indication that production had even come down or how it had changed over the years. So even without giving whatever proprietary information, I think that would be helpful as we look at is the performance getting better or worse, even if it's qualitatively.

MS MURTHY: Thank you.

Yes, I understand the relevance of that information. We do look at that information. When we look at their emissions, we do ask the questions related to the sorts of releases and correlated to the production limits.

Going beyond a production limit is a

violation of the licence, so that would definitely not be something that we would let go by without bringing it to the Commission's attention, so that hasn't happened.

MEMBER VELSHI: Right. And that wasn't my concern.

My concern was, you need to provide more information.

MS MURTHY: Kavita Murthy, for the record. Yes, thank you.

THE PRESIDENT: But I'm still -- try to explain to me why is that confidential, competitive confidential for knowing -- you know what the licence limit is. Why is production number which something below that are confidential or commercial sensitive numbers?

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

We mapped out during our presentation that it's a very small marketplace in relation to both conversion services and even smaller in relation to commercial uranium dioxide production, so in that context, we're mindful of our potential impact on the market with that production information being more broadly available.

THE PRESIDENT: What potential impact? All your supplies and -- beside, any time you give it to the government, I'm not sure you consider it to be that

secure in terms of kind of information.

So I still don't understand why -- everybody knows the maximum. If you go 10 percent below maximum, why is that confidential?

You're not convincing me on this.

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

I can only track what we have in our public disclosure in relation to that where we do not disclose our production for uranium dioxide or uranium hexafluoride as part of our compliance with securities laws.

THE PRESIDENT: Yet all uranium shipment and abroad are all known, so we know there -- let's say all uranium production by Cameco Australia, Kazakhstan, they're annually published.

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

There is production information around the production of uranium ore concentrate and the upstream products, but not necessarily around the uranium hexafluoride and uranium dioxide.

THE PRESIDENT: What's the difference?

MR. MOONEY: If you look at it in the context of the marketplace, there's a lot more producers of

uranium ore concentrate. You touched on Australia, Kazakhstan, those sorts of things, but when it comes down to uranium conversion facilities, we talked about three uranium conversion facilities in the western world and one uranium dioxide facility in Canada.

THE PRESIDENT: Staff, did you do an assessment about whether that's true confidential material, or you just accepted it?

MS MURTHY: Kavita Murthy, for the record. I'll ask Ben Prieur to give more precision, but I believe we have accepted it.

MR. PRIEUR: Benjamin Prieur, for the record.

To date, CNSC staff has been accepting that.

THE PRESIDENT: Thank you.

Ms Velshi, finished?

MR. CLARK: May I add to that? Dale Clark, for the record.

I would just like to add or emphasize to the comments about a very limited market for conversion, and you're drawing a comparison to uranium production which is very different with many, many different producers around the world.

The uranium conversion market is highly

competitive today. It is a very challenged and a highly competitive market. One other producer or converter in North America. To my knowledge, I don't believe that other converter would release that information, either.

So there is -- it could be argued there is a potential competitive advantage to knowing the level of excess capacity or availability of your competitors, and in a very highly competitive market, which that conversion industry is, that can be a competitive advantage.

THE PRESIDENT: But the licence limit, the licence -- the maximum production allowable is the number that's already in the public. Everybody knows what it is. Everything else is noise in commercial.

MR. CLARK: So again, that number is very public and we confirm, you know, that we maintain operations within the licence limit. That is public information. But within that production limit, that's where we deem that there could be a competitive advantage in the industry.

THE PRESIDENT: M. Tolgyesi.

MEMBER TOLGYESI: Merci, M. le président.

I will just say two words about what you are talking about, about this increased limit. For me, what's difficult to understand, production is not changing. The process is not changing. Why they should increase the

limit of emission when nothing is changing?

Does it mean that you will expect that there will be more high grade or more pollution? I don't know the reason but, you know, that's the difficulty what I have.

MR. RINKER: Mike Rinker, for the record.

So I'll start at a high level. But first of all, the dose constraint of 50 microsieverts per annum has not changed, so the level of protection for the public that is being provided by the limit has not changed. What has changed is the scientific understanding of how uranium would cycle through the environment and be transferred through and causing a dose to people.

That scientific understanding and the models on how you would model that has changed. So over -- every five years, when the CSA standard is updated, the new science and new understanding of what that means in terms of what gets released to pose a dose of 50 microsieverts per annum has changed. But it's not related to the production of the facility.

And in fact, we'll see, you know, it -- this is a somewhat -- I think it's an important point that we need to be more detailed in our justification for the change, but it is a repeated thing that we've brought to the Commission where, when the CSA standard gets updated,

there are always tweaks to what gets released and what the limit is. But it's not a production related --

MEMBER TOLGYESI: It's like when you're looking -- I'm looking action levels compared to release limits. When you are looking the UF₆ stack, action level is 40 where our release limit is 280, which is about 14 percent.

Now, when you are looking uranium in UO₂ stack, action level is seven and the limit is 240, which is 2.9 percent.

How you establish that where should be the action level and why uranium in the UF₆ stack is less harmful, probably, than -- I mean, that's what I see -- compared to UO₂ stack?

MS TADROS: Haidy Tadros, for the record.

Maybe if I can try. It was mentioned by Mr. Jammal earlier, I think the understanding of how regulatory release limits are set in general and then how action levels are established with regards to the specific activities and parameters that are effective for the facility or for the industry that is in question, so as was mentioned, regulatory release limits are always the upper bounds.

If we were to consider, for example, the 50 millisievert dose to NEWS, that is based on science,

that is based on a very high limit, and throughout staff's presentations, you see that that limit is never -- is not a limit we regulate to. It is a regulatory limit that is never exceeded.

For a defence in depth, we establish action levels based on the specific parameters and the activities of facilities, and it's no different for emissions or for releases to the environment. There are release limits that are established through recognized science, recognized regulatory parameters, and the methodology does get updated and the information gets adjusted based on what the research and what the science tells us, but the action levels are really very specific to the facilities and the normal operations that are generated through the activities of the licensee. And action levels serve a very important purpose with regards to a first line of defence in depth with regards to potential loss of control.

So it's not that it's not a meaningful -- it has to be a meaningful action level, it has to be so far into what the activities signify that you are in an area where you need to constantly be tracking your action levels and adjusting them according to the activities provided.

Perhaps Ms Kavita Murthy can give more examples of the emissions of the UO_2 or UF_6 as per your

question, sir.

MS MURTHY: Kavita Murthy for the record.

So just to repeat what Ms Tadros has just said, a release limit is a limit which if surpassed will result in an enforcement action by the CNSC. An action limit exceedance does not result in an enforcement action but it does require the licensee to report to us. We do require the licensee to take corrective actions and we do put it at a level that reflects the daily operations of the facility. So we do look at what the normal operations look like and the licensee establishes what is the level of control that they need in order to give them an early indication of a loss of control and that is how they set it.

So you have to look at the release limits and action levels together, and the fact that the action level for one is much lower in terms of percentage than the other is because of our and licensee's review of what their emissions were for that particular effluent or emission.

MEMBER TOLGYESI: So if I understand, UO₂ plant is seven, the risk of potential loss of control is higher than you have in UF₆?

MR. RINKER: Mike Rinker for the record.

So the action level for the UO₂ plant is seven because typical operations might be four or five or

six, right. And the action level is higher for the UF₆ plant. I forget what the number is, but if it was 40, then that would mean the data is -- normal operations is 35. So to exceed the action level at the UF₆ plant would mean there must be a loss of control, so it's tight to normal operations. The UO₂ plant, there is less uranium going through it, the normal releases are lower, we put the action level lower. Now, the release limit is similar because it's based on 50 microsieverts per annum.

THE PRESIDENT: Thank you.

Dr. McEwan...?

MEMBER MCEWAN: Thank you.

Perhaps I could go to Ms Tilman's Slide 13, the first bullet about the decontamination. When I had read "the metal will be decontaminated," I had assumed it would be decontaminated before it was sent out to wherever it went to. Can the metal be completely decontaminated or will there be some residual activity left behind on it, and what controls would we place on that?

MR. INGALLS: Dave Ingalls for the record.

All of the scrap metal that we release from our facility we do decontaminate. So we have various processes onsite and we are quite proud of the program we have to be able to clean a large variety of metal. Before it leaves our facility, we do scan the metal objects and

there is a free release level that's defined through the regulations and we ensure that all of the material that's being released from our facility is below that free release limit.

THE PRESIDENT: Staff, maybe you can remind everybody what is the free release regulatory process.

MS MURTHY: Kavita Murthy for the record. I will call Christina Dodkin, who is the Radiation Protection Specialist, to come and answer that question, please.

MS DODKIN: Thank you and good afternoon. My name is Christina Dodkin. I am a Radiation Protection Specialist with the CNSC.

So in the *Nuclear Substances and Radiation Devices Regulations* we do have clearance levels that were introduced in 2008. They align with international standards for exemption and clearance and are actually the same as those published in the current version of the International Atomic Energy Agency's Basic Safety Standards, that's General Safety Requirements Part 3, which was published in 2014.

So clearance is an internationally accepted practice allowing material to be removed from regulatory control provided that it has been verified and

monitored and meets the clearance criteria that's specified in the Regulations.

Now, the basis for these clearance levels I think is an important point. They are based on very conservative radiological exposure scenarios and dose models which looked at both workers and the public. The models included the reuse, disposal and recycle of the material, and these models limit the annual effective dose to any person below 10 microsieverts, which is 1 percent of the annual effective dose limit for a member of the public, which is 1,000 microsieverts or 1 mSv. Because the models are so very conservative, the actual dose that a person would receive from handling cleared material from a facility meeting our clearance levels and regulation would actually be much lower than 10 microsieverts per year.

And as mentioned by Cameco, they do have a program for it, if we look at their scrap metal, for free releasing that material, which is looked at during compliance activities during CNSC staff's inspections, and we found that there is rigour in that and we have confidence that they are releasing well below the clearance levels as dictated by regulation. Thank you.

MR. JAMMAL: It's Ramzi Jammal for the record. If I might add to Christina's comments.

The scrap metal facilities, they do have

detectors, so you have now defence in depth at all levels, meeting our requirements for free release, the transport, and at the scrap metal facility they have detectors in place to detect. And we have had reports to the CNSC where either a source was present or the contamination was not cleaned up properly. To date, most of the incidents we receive at the CNSC are mainly inappropriate disposal of the source, very, very little with respect to scrap metal facility that is taking on improperly or non-free release type of contamination.

THE PRESIDENT: Thank you.

Ms Velshi...?

MEMBER VELSHI: I want to make sure I understand what in the licence -- what the request is for changes to the licence. So production levels are the same. Tell me why for UO_2 there is no daily maximum limit whereas there is for UF_6 ?

MS MURTHY: Kavita Murthy for the record. We will get back to you with an answer to that.

MEMBER VELSHI: Thank you.

And then as I was looking at your CMD on proposed licence changes, and you said the licensed activities have been modified to better reflect the activities that have been carried out and will continue to be carried out, and as we look at the proposed draft

licence, under Licensed Activities II, you know, it says "possess, transfer, use," and so on, you have added "and dispose nuclear substances." Are you on the same page?

MS MURTHY: Kavita Murthy for the record.

That's primarily tied to the activities that will be undertaken as a part of the Vision in Motion, that they will have --

MEMBER VELSHI: Oh, okay. So it's just to capture -- I wondered whether they had captured some other activity that wasn't there. Okay, thank you.

And then the last one was around depleted uranium inventory. So the current licence allows them to have a certain amount. Does the request or proposed licence still have that as unchanged?

MR. INGALLS: Dave Ingalls for the record.

We do continue to have a licence to be able to process depleted uranium. In fact, for the CANDU industry there is a requirement to provide depleted uranium for the CANDU reactors on a periodic basis. Typically, it's when they are going into a refurbishment and they need to shut down or restart the reactors, and we provide that depleted UO₂ product for the CANDU fleet.

MEMBER VELSHI: So you are just confirming that that remains unchanged, you still need whatever, that same level of inventory?

MR. INGALLS: Dave Ingalls for the record.
That is correct.

THE PRESIDENT: But I think the intervenors are arguing whether there should -- or asking whether there should be a limit, a maximum limit on the amount.

MR. INGALLS: Dave Ingalls for the record.
The depleted uranium that we produce at the site is in the form of UO_2 and it's captured within the 2,000 tonnes of UO_2 production. So if we were to produce for instance 100 tonnes of depleted, that would reduce our natural maximum to 2,700 tonnes.

THE PRESIDENT: Okay, thank you.
Monsieur Tolgyesi...?

MEMBER TOLGYESI: My question is regarding the 17,000 drums of historic uranium-bearing waste should be transferred to a long-term waste management facility. According to the intervenor, this material is under International Atomic Energy Agency safeguards. So to what extent IAEA is involved in this potential transfer? Should you have their accord before you transfer and should they be involved or how will it be transferred and stored?

MS MURTHY: Kavita Murthy for the record.
So the IAEA safeguards inspectors do come and inspect the site. They are part of the treaties that

Canada has signed.

I will ask Patrick Burton to give a more detailed answer to that question.

MR. BURTON: My name is Patrick Burton, for the record. I am a Senior Safeguards Advisor with the CNSC.

So as the intervenor mentioned, there is an inventory of roughly 17,000 drums of waste, which is currently stored on the Centre Pier of the Port Hope Conversion Facility site, which is eligible to go into the long-term waste management facility, or LTWMF, and that inventory is under IAEA safeguards. That is to say that it has been declared to the IAEA and is open to verification by them. So they have a role to play in terms of verifying that the transfer of that material and its placement in the LTWMF happens in the way that we have declared to them that it will.

So we have been discussing with the IAEA for several years already exactly what their verification of that material movement might look like. The details in some ways are still being resolved, but it will involve a set of neutron detectors which will be installed at the LTWMF and those detectors will serve to allow the IAEA to independently and in near real time measure the quantity of depleted uranium in the material that's going into the

LTWMF.

That relatively high level of scrutiny on depleted uranium waste is because the material will then become inaccessible as the mound is built up and over those drums.

I hope that answers your question.

MEMBER TOLGYESI: So you cannot transfer that without the agreement of IAEA?

MR. BURTON: It's not so much a permissive link. We can't transfer it without having arrangements in place for them to verify it should they choose to, and in this case, because of the quantity of material involved, they have indicated well in advance that they are going to be putting a bit of effort into verifying this transfer.

THE PRESIDENT: Thank you.

Anybody else?

I have only one question and again I would like to tap into the MOE.

I'm trying to understand what role are you guys going to play in Vision in Motion. We have heard about Cameco, we have heard about CNL and the municipalities. That's complicated enough. What's your role in all of this?

MR. BRADLEY: David Bradley for the record.

So our role in Vision in Motion, we have met with Cameco. We have met with CNSC staff and Environment Canada and Climate Change staff as well to review Cameco's proposal for Vision in Motion. Our role here is to review the groundwater monitoring data as the cleanup continues to ensure appropriate measures are in place to protect or limit discharges to the harbour of contamination.

There are also aspects to the project where there will be changes to the stormwater management systems which will also require an environmental compliance approval, amendment from the Ministry of the Environment. So we will be involved in that early on with Cameco to ensure that any stormwater changes are reviewed with us. You know, we will take a look to see if there are any monitoring requirements that are needed in that new approval.

As I mentioned, we are also involved in the groundwater pump and treat system, in monitoring the effectiveness of that. So our technical staff will review those reports and ensure that, you know, adequate measures are in place.

Overall, the Ministry of the Environment and Climate Change is supportive of the Vision in Motion project and the reduction of contamination on the property

and we see that there will be improvements to the discharges to the harbour through that.

THE PRESIDENT: I don't know if you had a chance to listen to Ontario Waterkeeper's presentation. They argue that the Ministry of Environment -- and I'm paraphrasing -- is nowhere to be seen in overseeing these activities. That is the same thing with CNSC, so don't feel bad.

--- Laughter / Rires

THE PRESIDENT: But the question is how comfortable are you in terms of the monitoring of the information and do you actually measure and publish some of the observations in terms of environmental impacts?

MR. BRADLEY: We are comfortable with the monitoring program that's in place now. As I mentioned, we are supportive of the project, the Vision in Motion project and that the cleanup will have improvements to Lake Ontario and discharges from the property.

We do regular inspections of the facility. We do technical reviews of the groundwater monitoring, service water monitoring. Our technical staff prepare memos regarding those reviews pretty much on an annual basis. They are not made public but if a member of the public were to contact our office and ask for a copy of that, we would certainly provide them with a copy of our

technical memos. They are not posted anywhere on the Internet or anything like that.

THE PRESIDENT: Thank you.

Ms Tilman, you have the last word.

MS TILMAN: Words.

THE PRESIDENT: Words.

--- Laughter / Rires

MS TILMAN: Okay, last few words. The Cameco Plant is well past its best before date and it should be considering its end of life. I was surprised to hear that in the decommissioning discussions that there seems to be no kind of date or future date for this. This is a 70-plus-year-old facility, I mean things have been leaking, it's time.

And the legacy of wastes are still a major issue. So we have legacy waste, we have operational waste and we have waste on the site that are going to be moved.

One of the things that tends to get ignored with a lot of the data that's presented, we have constant emissions going out into the water, for example, fluoride, uranium, ammonium, arsenic. These go out on a yearly basis but there is a cumulative effect of these emissions over all these years. These are long-term toxins, they don't disappear. None of this stuff disappears, it accumulates year after year.

So regardless of these annual limits, we have cumulative effects to consider and that is not addressed in any of the documents that I have seen. So that is something that the CNSC, I think, needs to consider when it looks at the standards, when it looks at the release limits. How are these set? What do they really take into account? Do they take into account the long-term exposure as well, not just that one dose level of 50 microsieverts and so on? What more do they take into account?

The reason I mention this is not only do I feel we need a shorter licence period, we need to get public involved in this, as has been mentioned, in moving into this decommissioning phase because that is going to be one heck of another source of waste. Is the money going to be there for it?

Finally, I would like to comment on some of the health issues that tend to get ignored or pushed. Yesterday we heard about several studies, as many as 30 health studies have been done, but the question remained, were these studies focused on actual health outputs? What kind of epidemiological studies were they? And has CNSC or Health Canada or Cameco, whatever agency, the province, produced a list of these studies, indicated what kind of studies they are that are specific to Port Hope? I think

as long as that gets sort of shuffled underneath the carpet, the health issues tend to get shuffled as well. It's very hard to parse out, I agree, but I think it has to be done. The community has had enough of this.

And thank you very much for the opportunity to present.

THE PRESIDENT: Thank you for your intervention.

CMD 16-H8.20

Oral presentation by Terry Verrydt

THE PRESIDENT: I would like to move now to the next submission, which is an oral presentation by Mr. Verrydt, as outlined in CMD 16-H8.20.

Mr. Verrydt, the floor is yours.

MR. VERRYDT: Thank you, Mr. President and the Commission. I would like to thank you for this opportunity to speak.

For the record, my name is Terry Verrydt. I am a UF₆ chemical operator at Port Hope Conversion Facility. I am going on my fifth year there and feel fortunate to be able to work here at the age of 52. Not too many companies would be willing to spend the amount of time and money they spent on me to train me, getting this

close to retirement.

Before joining Cameco, I worked in the paper industry, which had a reputation of being a very dangerous industry. After working there for 21 years, I realized it wasn't so much dangerous as it was unsafe. Safety procedures and policies were not followed, nor enforced.

Over the course of seven years, I had been hurt a few times, five stitches to one finger, seven to another, 13 to put a piece back on a finger. And yes, were they preventable? Very much so.

I put production -- excuse me. Instead of shutting down the equipment and locking it out and tagging it out, I refused to do it. I just decided that production was more important. Downtime first, that's what they always drove. The cost of downtime was always mentioned in meetings. It was always in the back of your mind whenever something was done.

But the incident that shook me the most is the last one. I put myself in a position to be injured, all to save the company downtime. It was an incident I want you to know about.

At the time of the incident I was an hourly co-chair, a member of the Safety Committee. I was actively involved in training employees, working with

heights, confined space entry, confined space rescue, lockout, tagout and mobile equipment. I had spent six months doing workwell audits for the company. I was involved in a lot of safety there. After the incident, I quit all safety committees and focused on putting myself first and making sure I went home every day.

This place had all the safety procedures and policies, and I should know, I was the one preaching them. They were never followed. The hourly people never bought into it and neither did the management. Downtime was first. Safety culture was nonexistent.

The incident happened when I had been there about 17 years, so I had been about 10 years on the safety committee by now after the incidents I had first mentioned. A dryer can got wrapped with 2 centimetres of paper. A spring wad arm was the fastest way of removing it. An air gun -- a slower, noisier, dirtier method -- was the proper way of doing it.

So it was 11 o'clock at night on a night shift. To get the machine going again, I chose to remove it with water. I stopped the machine and used a water jet to cut through the paper. My supervisor and one other co-worker were present. Once we had it cut through on the machine, we jogged it in reverse, the paper roll, to jog it off the roll. The paper didn't fall but it got hung up on

a beam. This is where the problem escalated.

Had I done it with only air, only a little bit comes off at a time, as I stated earlier, but, you know what, production first. With this big wad of paper, approximately 1 tonne, in the air, time was of the essence. I went and grabbed a scissor lift and the supervisor got us the permission to use a fire hose to knock this paper off a beam. We did not do a lockout, we did not do a tagout. As well, no working at heights protocol was followed, even though those are the ones I trained.

So here I was 25 feet up in the air, no harness, no lanyard on either one of us, a fire hose trying to knock paper off a beam. Things went bad. I couldn't reach it from the platform, so I decided I would climb up on the railings and I still couldn't reach it. So then I climbed into the felt run on my belly, climbing underneath the hot dryer can, which is about 150 degrees Celsius. Lying down on the felt, I'd hit the paper.

So after about 10 minutes with the fire hose, the paper fell off the beam, but the paper didn't fall to the floor. The paper fell on the stretch roll below. Acting as the stretch roll would, it started to pull the dryer can up against the -- it started to pull the felt run up against the dryer can. The only problem is I was laying on it.

I tried crawling out on my belly as the dryer felt started to press me into the dryer. My co-worker that was with me grabbed me on my legs, managing to wiggle out, ripped a boot off my foot, but he ripped me out of there, got me back on the scissor lift. I couldn't thank him enough for what he did. I was only wearing a T-shirt, so I had burns to take care of where the dryer can came in contact.

The scary part is I didn't report any of this. No report, no nothing. Instead, the people I was with, the one that was on the scissor lift with me, rushed me to the shower and hid me there. I got cleaned up and then co-workers called my wife to bring me clean clothes. I put ice packs and bandages on my back, but I managed to finish the shift.

I ended up with burns on my shoulder blades, one bad enough I got it covered with a tattoo. The other one healed with no scar. But, you know what, I am alive.

I asked myself could this have been prevented. The answer is yes. The thing about all this is people that I taught and I didn't follow the stuff I trained people for or preached about.

There are more incidents than I care to talk about and they are limitless, but it comes down to one

thing. You can create all the policies and procedures you want, but if you don't have commitment from both sides, production before safety motto just can't exist. Non-compliance of these policies and the fear of reporting them in a safety culture is doomed to fail. At this place, that is what happened.

So after I went through all this, I put myself first. If it required a lockout, I made sure it was done or had it done for me. Even if I was the only lock on that lockbox, which happened frequently, and there was 10 people working on this, I knew I was going home.

After 21 years of near misses and accidents, the doors shut. I took a rest and soon after that I went to work for a smaller company. It produced satellite dishes. I figured it was safer than what I was doing. The company had grown while I was there to about 30 people, so a health and safety representative was no longer enough.

After a visit from the Ministry, they had to create a Joint Health and Safety Committee. I was approached and asked if I could co-chair. I agreed. Another mistake on my part as I was strictly there only to meet labour code. They did not believe in safety. Half-hearted, I stayed on as co-chair until they could find another person to replace me.

The human resources manager did everything she could. She found policies and procedures off the Internet and used some from other places where she had worked just to get the place with Ministry compliance when they came back in.

While working there, I heard through a friend of mine that Cameco was hiring. He told me how they put safety first and production second. I applied. With a little help, I got the job. It was my first real experience of what a safety culture looks like when all employees and management buy into it.

They start each and every meeting with a safety moment. This could be about work-related stuff, outside stuff at home, anyone can contribute. If you have a safety moment, you can put up your hand and apply.

I spent my whole life working in a production-before-safety environment. This took a bit to get used to. The first thing I realized is that the slogan "No job is so important you can't take the time to do it safely" is what they truly mean and adhere to, from locking something out to unlocking it and putting it back online. A questioning attitude is welcome and almost expected.

When there is hazardous work to be performed, a JHA is available, which is a Job Hazard Analysis. It will entail the steps to perform the job

safely, including PB(ph) and the potential environmental impact before starting any task, and once completed I am asked if there is something or some way to perform a job safer and with less risk. This communication is vital to make work being performed safer and with less exposure and potential upsets.

After every meeting, my morning meetings, my supervisors say to us: Verify, communicate and responsibility are the three words to use before operating equipment or doing any job. The potential exposure to some very hazardous chemicals can be minimized, if not removed, if you follow those three words.

I am qualified in two areas: a cell room and Tower 1. I work with some of the most extremely dangerous chemicals, but I'm not scared of them, I am very respectful of them. With the training that I received and the safety policies and procedures that they have here, I can perform my job safely.

The people that work there, from the supervisors, training staff, safety committee, coworkers and some other people I am going to probably fail to mention, are knowledgeable and have your safety in mind. Whenever work needs to be performed, you are never sent to do anything that you are not comfortable doing. Whether it's an extra person to help you out or to sit down and

walk you through the task or procedure, they will make the time to do it for you.

Since joining this company, two things have happened to me. I can honestly say I have never felt safer in a job than I am here and my family feels the same way. Second, the person who was up on that scissor lift with me now works there. Now, he can go home to his family too.

Thank you for your time.

THE PRESIDENT: Thank you.

Comments?

Dr. McEwan...?

MEMBER MCEWAN: So you have had an interesting career, I think is perhaps -- when you moved from one industry into Cameco, what level of training were you given sort of as an entry level training and then how was it constructed and expanded thereafter?

MR. VERRYDT: I arrived, I had 20 years of basically operations, so I could bring that computer experience with me. So with that, they put you through pretty complex training. They assign you an area and you sit down and you spend a week with someone and they go through all the policies and procedures the job entails through it.

So after finishing that, they put you almost like in an apprenticeship program where you will

spend, in some areas it's 1,000 hours, in some areas it's 500 hours, depending on the complexity of the area, and you will train with someone beside you and then you will become a Q2.

Once you're a Q2, you can work the area but you can't work at all alone. Someone has to be qualified in the area in which you are in and has to be available to you at all times. There is a set amount of time again depending on the area.

And after you complete that, you will go through a set of testings and then a walk-through with a supervisor who is extremely knowledgeable in the area and they will question you through everything.

And then every couple of years you will be retrained, you will be re-qualified in that area, you will go through another walk-through and you will have a series of tests.

So once you are out of an area for a little while, which we were this year, we were brought back. So I was put back into the cell room again. Once I was brought back there, I was retrained. So they give you a set of start-up questions to answer and walk-through so you refresh yourself with the area in which you are working in again.

THE PRESIDENT: Ms Velshi...?

MEMBER VELSHI: A question for Cameco.

Have you had supervisors who have had a real hard time aligning with this culture, you know, that their behaviours and attitudes just don't match with that and you have had to let them go or retrain them or, you know, people have adjusted, especially those who have come from outside, to what your expectations are?

MR. INGALLS: Dave Ingalls for the record.

The one thing I can honestly say in listening to the interventions from employees of my facility, it is really heartfelt, it warms my heart to hear the messages and their passion behind our facility. It really makes me appreciate the great people we have working at our facility.

I would say yes, there are different levels of adoption of when change is happening in the workplace and with any change you have to have a change management plan and that includes figuring out how to address people that perhaps will resist the change.

And yes, there have been some difficult decisions that had to be made, that people don't adopt the new practices, but we make sure we hold people accountable to living up to our expectations and exhibiting the behaviours that we expect.

THE PRESIDENT: Thank you. Thank you for

your -- excuse me.

MS MURTHY: Finally, Dr. Binder -- this is Kavita Murthy for the record -- I had said we would get back to you on the daily limits on the UF₆ and the UO₂. If you would like, I can give you the answer now.

THE PRESIDENT: Okay. But we will let the intervenor --

MS MURTHY: Yes.

THE PRESIDENT: So thank you for sharing with us your experience. Thank you.

Okay.

MS MURTHY: I apologize for interrupting. Kavita Murthy for the record.

So the difference between the production limits for the UF₆ plant, which has a daily production and an annual production limit, and the UO₂ plant, which only has an annual production limit, comes from the fact that the UF₆ operations run continuously when they are running, whereas the UO₂ is a batch operation, it is on for a few days and then not on for a few days and so it makes more sense for us to have the daily limits on the one that is continuous and has a higher production limit.

THE PRESIDENT: Okay, thank you.

CMD 16-H8.29

Oral presentation by the Mohawks of the Bay of Quinte

THE PRESIDENT: I would like to move to the next submission, which is an oral presentation by the Mohawks of the Bay of Quinte, as outlined in CMD 16-H8.29.

I understand that Ms Storms will make the presentation. Over to you.

MS STORMS: Good afternoon.

--- Aboriginal language spoken /

Langue autochtone parlée

MS STORMS: For the record, my name is Nicole Storms. I am the Environmental Services Coordinator for the Mohawks of the Bay of Quinte and also a resident of Tyendinaga Mohawk Territory.

Beyond our inherent responsibility to preserve and protect the land, water and air, we exercise our treaty right to hunt, fish and gather in the Port Hope, Cobourg, Rice Lake area, and that of course would be under The Dish with One Spoon, or better known as the Beaver Bowl Treaty that we made pre-contact with the Anishinaabe Confederacy and the Mississaugas.

I brought with me today, who will actually do the bulk of the presentation, our consultant, and I will let him introduce himself. Thank you.

MR. SHIPLEY: So I am Kevin Shipley from XCG Consulting and we did some work for the Mohawks of the Bay of Quinte to review the documentation that we received.

I believe you have a copy of our submission. I'm just going to go briefly through it. There are a few points that I would like to add to what was presented in this letter, things that we learned and things that we discussed after this was submitted with people from CNSC and from Cameco.

But let me just start off with section 4.1 in my letter which deals with the management of waste, and it has already been touched on today, regarding the volume of waste that will be dealt with under the VIM and the fact that that material is going to be sent to a long-term waste management facility.

Now, the Mohawks of the Bay of Quinte are a little over 100 kilometres away from this activity where this material is being shifted from the Cameco facility to this long-term facility, so there is quite a distance there, but nevertheless, given the fact that the Mohawks of the Bay of Quinte conduct fishing and gathering activities, other activities in the vicinity, including in the Ganaraska River Watershed, we are still concerned about potential releases that could occur during these activities and so it's imperative that Cameco follow through on their

environmental monitoring commitments during this work and during the remediation. The Mohawks of the Bay of Quinte would like to be updated on those activities as they go along.

In terms of waste and hazardous products such as the uranium hexafluoride and the uranium dioxide which are shipped we understand by road, rail and marine, the Mohawks of the Bay of Quinte are concerned about those products as well as any wastes that may be transported in the vicinity of the Tyendinaga Mohawk Territory and so would like to ensure that in this relicensing process that strict regulations and procedures be followed to prevent any mishaps from that transport and they would also like to be notified in the event of anything being transported in the vicinity of the Tyendinaga Mohawk Territory.

In terms of radiological releases, we noted in reviewing the documentation that there had been some radiation protection action levels that were exceeded during the licence period and as well, under atmospheric releases, section 4.3 of the letter, that a stack action level at the uranium dioxide plant was exceeded once during the licensing period. These types of exceedances are of concern and we understand that Cameco is making efforts to ensure that these do not occur, but nevertheless, it is important from our perspective that these action levels be

adhered to, to the extent possible, and procedures be put in place to ensure that they are met.

There was a discussion a couple of presenters ago regarding the difference between the operational release limits, the derived release limits and the action levels, so there is a little bit of a change in terms of our letter in that we do have a better understanding now of the difference between those.

I understand now from discussions with CNSC that an increase in an operating release limit does not necessarily mean and in general does not mean that the action level will increase and so I do understand that now, but nevertheless, we are concerned about the increase in the operational release limit for uranium from .15 to .24 kg per hour.

And I echo the previous comments that were made that this should be explained in more detail in the documents as to how this increase occurred, what was the -- just it doesn't need to be a detailed set of calculations but some kind of explanation as to the basis for that increase. I would also like to emphasize that we would not like to see any kind of increase in an action level as a result of an increase in an operating release limit.

Under section 4.4, this is relating to sanitary sewer and harbour impacts on aquatic life, we are

concerned about some of the releases that have been made into the harbour. For example, the average concentration of ammonia and ammonium in the harbour is quite close to the CCME guideline and the maximum concentration observed in 2015 was over twice the guideline. So that is a concern. As well, uranium has the potential to bioaccumulate in aquatic food chains, so we feel with regard to these contaminants that it's essential for Cameco to make an increased effort to reduce their discharges into the harbour.

Cooling water as well is released at a higher temperature than ambient and we are concerned given that the Mohawks of the Bay of Quinte have fishing that is carried on in the Ganaraska River, which is a coldwater fish habitat, that that could be quite vulnerable to these increases in temperature and we recommend an expanded long-term monitoring program to assess the effects of the thermal and chemical impacts on fish species and invertebrate populations in the Ganaraska River and Lake Ontario.

Moving on to section 4.5 of our letter, we noted that in terms of groundwater releases we understand there is a pump and treat system in place at the facility. We understand that this pump and treat system will be upgraded and improved as part of the new -- during the new

licensing period, but we do note that there are some concerns. We saw in the documentation that approximately 95 kg of ammonia were released into the harbour via groundwater. This is a contaminant that is escaping the pump and treat operation and we would hope that sufficient improvements will be made to greatly reduce this type of release. Ammonia is a harmful contaminant to aquatic life and especially in the form of un-ionized ammonia and I don't believe I saw in the documentation a breakdown of comparing total ammonia to un-ionized ammonia in that release and I think that information would be useful.

As well, in terms of completing groundwater mass discharge calculations, it's our understanding from additional information we obtained that these calculations are completed once every two years. We think that these groundwater mass discharge calculations should be completed annually.

And then in terms of the VIM project in relation to wastewater and groundwater releases, I believe that during that project there is going to be a significant amount of wastewater to be dealt with. There will be rainwater falling on the areas that are being excavated, there will be likely groundwater infiltrating into those areas. We would like to see strict guidelines and procedures in place to ensure that that contaminated water

is properly managed during that project.

Section 4.6, soil impacts. We understand that Cameco performs soil sampling annually to determine what sorts of impacts are occurring. We also note that uranium soil sampling was limited to a depth of 15 centimetres, but we recommend that a greater frequency of soil sampling be conducted and that it be conducted down to a depth of at least 60 centimetres, as has been done in previous years, to better understand the extent of contaminants in the soil.

In terms of section 4.7, this is relating to environmental spills and we saw that 15 minor environmental spills were reported to CNSC and the MOECC. Although the spills are described as minor, any kind of environmental spill is a concern. It's an indication that there are some flaws in the systems, in the procedures, and where a minor spill occurs, there is a potential for a major spill to also occur because of a breakdown in the environmental management systems that led to that release. So in our view, any kind of environmental spills are a concern and that Cameco should ensure that action is taken to reduce these spills in the future and preferably eliminate them.

And we would also like to see notification to the Mohawks of the Bay of Quinte in the event of any

kind of spill that could potentially impact the Mohawks of the Bay of Quinte, not only the Tyendinaga Mohawk Territory but the areas that the Mohawks of the Bay of Quinte traditionally use for hunting, fishing and gathering. So notification is important there.

And then last section, section 4.8, we obtained some additional information after this letter was written regarding the review that was completed in relation to the damage that occurred to the Fukushima nuclear power plant in Japan. Cameco provided some summary information on that, which we reviewed, and we could see that, based on that information, that they have stepped up their emergency action plan and their procedures to try to reduce the possibility of any catastrophic release of contamination in the event of that type of event, whether it's an earthquake, a tornado, a flood.

So we appreciate that, and we want to emphasize that this is very important to bring the facility up to the highest standard to prevent this kind of thing. This is definitely a concern, although, of course, it was pointed out to us that this is not a nuclear power plant, so the level of risk is presumably lower.

But, nevertheless, there are some hazardous radioactive substances at this facility, and we believe that there is a risk there. Although the

documentation I saw indicated that impacts likely would not occur very far out from the plant, nevertheless we believe that there could be releases that could affect Lake Ontario and could affect the Ganaraska River, and that this is a very serious issue and needs to be looked at carefully.

That is basically all of the points that I have in the letter. I think I'm pretty much out of time, so if there are any questions at this point....

THE PRESIDENT: Thank you.

Dr. McEwan?

MEMBER MCEWAN: I just have a couple of very simple questions.

In your section 4.6, where you recommend going to more frequent sampling and deeper sampling, is that unreasonable, is it reasonable is it doable?

MR. INGALLS: Dave Ingalls, for the record.

We have a very comprehensive environmental monitoring program around our site that includes both the source monitoring and ambient monitoring. The soil sampling that we do is one component of our ambient monitoring. Really, the intention of the soil sampling is more the long-term accumulation monitoring for that in the soils.

In terms of shorter term impacts to the

environment, we have a number of other methods to look for the impact of that. For example, we have high-volume air samplers, which are sampled both weekly and monthly, that operate both around our facility and in the community looking for airborne contaminants. We have dust fall jars located, again, around the facility and in the community looking for sediments that are analyzed monthly. We also have lime candles looking for the impact of fluorides, which are analyzed weekly as well.

That provides the much more immediate and timely feedback, as opposed to the soil sampling, which is meant to be a longer term monitoring aspect.

MEMBER MCEWAN: So have you seen over a 10-year period significant changes in the soil monitoring?

MR. INGALLS: Dave Ingalls, for the record.

We do have a clean soil plot located by the waterworks, which was in a cleaned area, and we're not seeing any significant accumulation of uranium in the soils in that soil plot.

MEMBER MCEWAN: So that would be serving as your baseline for modern operations?

MR. INGALLS: Dave Ingalls, for the record.

Yes, that's indicating that our current

operations are not causing an accumulation of uranium in the soils.

MEMBER MCEWAN: So for the intervenors, does that provide you with some answer?

MR. SHIPLEY: Yes, I was aware of the air monitoring and dust fall monitoring, and so on, that's being done. I think that does provide a level of comfort that's being done and that's providing some more immediate results. The fact that the soil doesn't seem to have deteriorated in the last number of years is comforting as well. But nevertheless, I think that the amount of monitoring being done at the facility, although there's quite a bit being done, nevertheless I think there's significant risks associated with a facility of this type, and I don't think you could go wrong by doing a little bit more soil monitoring, as we've point out here. I don't think there's anything to be lost by doing that, and if there's something that gets missed in the air monitoring or missed in the dust fall monitoring, it might end up being picked up in the soil monitoring.

None of these monitoring methods are comprehensively able to detect all environmental impacts. Sometimes things get missed, so it's best to have a multi-line approach to collecting information so that you can identify problems when they occur.

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

CNSC regularly reviews the soil monitoring results from Cameco, and are satisfied with them.

To echo what's been observed, especially with the clean plot that was identified, there's hasn't been any observable increases attributable to the Port Hope Conversion Facility operations.

The VIM project, though, is going to provide an opportunity to revisit that soil monitoring program, because we are going to have the ability, or Cameco may have the ability, to re-examine that program in light of the community having been rid of some of this history low-level contamination. Therefore, the expectation moving forward post-VIM would be to revisit that soil monitoring program, and to adjust it as appropriate.

THE PRESIDENT: But just so I understand, the intervenor says that you used to do 60 centimetres, and now you shift to 15. Is that correct? So why was it shifted? What's the difference in, I don't know, cost or hardship between 15 and 60?

MR. McALLISTER: I can speak to it from a regulator's perspective.

We accepted that change because the goal

of the soil monitoring program is to determine if Cameco's emissions are contributing to uranium accumulation in the soil. When you get below a certain depth, given the historic legacy in the area, it would be practically impossible to identify that at those deeper depths. That's why the 15 centimetres, for the purposes of verifying that objective of the soil monitoring program, is suffice.

THE PRESIDENT: So you actually verified that there's not much difference between doing -- you don't get additional information with doing between 60 and 15?

MR. McALLISTER: Correct. We do know that there is contamination, historic contamination, deeper in the soil columns.

THE PRESIDENT: Mr. Tolgyesi.

MEMBER TOLGYESI: This is concerning 4.8, when you're talking about seismic events.

We know that several items were completed within the post-Fukushima action plans. Could you comment what's the potential risk of seismic events, and which actions were specifically implemented to reduce this risk, and also weather, specifically tornado risk, what was the inspections, what your conclusions, and what was the measures what you were implementing?

MS MURTHY: Kavita Murthy, for the record. Following the events at the Fukushima

Daiichi Nuclear Power Plant under the *General Nuclear Safety and Control Regulations*, section 12.2, the CNSC issued a letter requesting all operators of nuclear power plants and all major nuclear facilities to undertake a review of the lessons learned in Fukushima to examine their safety cases and to report on the implementation of the corrective actions.

Cameco did a complete review of its safety case and emergency preparedness, examined the consequences of a worst-case event beyond-design-basis event, such as an earthquake or a plane crash. They improved some areas -- or they identified some areas where they needed to improve. Major improvements were made to their emergency plans. All the actions that they identified on that one are closed.

They also developed and implemented a structural inspection program. That program was also implemented. It's also closed. They did improvements to their operational reliability program. That item is also closed. And then they also instituted some changes to their training program. As we heard yesterday, that's also in good state.

With regards to the probability for -- you asked about the likelihood of seismic events. I think I'd first like to pass this back to Cameco to speak about some of the initiatives they have taken, then we'll address the

other question.

MR. INGALLS: Dave Ingalls, for the record.

As a follow-up from the Fukushima event, we did respond to the 12.2 request from the CNSC staff. We did undertake a third-party review, as Ms. Murthy referenced there. Some of the key findings, as she mentioned, was reinforcing our emergency response procedures. For instance, we developed additional preplanning for events such as total utility outages, that type of thing, to ensure that the site could handle an event where we lose all utilities to the facility.

Through that we also demonstrated through assessments that the facility is safe, even if we lose all utilities, basically a complete station blackout type scenario.

As we also mentioned as well, our facility is located in a relatively low seismic area. We have implemented a structural inspection program to ensure that our building structures are always up to code. In addition, over the licence period we also made upgrades to our two production facilities, the UF₆ plant and the UO₂ plant, to bring them up to the current building structural code as well.

They were obviously built to code in the

day that they were built, which was back in the 1980s, but we've also brought them up to the most current code, which has more strict seismic requirements in it as well, as we're continuing to upgrade our facilities to keep them up to the most current codes.

THE PRESIDENT: Questions?

Ms Velshi?

MEMBER VELSHI: A question for staff on the quality of the harbour water. An intervenor has raised concerns about high ammonium, fluoride, and maybe even uranium levels.

After VIM, or after the cleanup of that, are the routine discharges expected to be really minimal and not as high as the water quality standards that I hear? I'm looking at page 30 of your written CMD, where, yeah, for fluoride and ammonia are pretty high. And then maybe Cameco can comment on why, in 2016, the uranium levels have increased the emission in harbour water, and that's page 44 of your written CMD.

MR. McALLISTER: It's Andrew McAllister, for the record.

We would expect discharges to the harbour to be decreased as a result of the VIM. We've heard different points today talk of, for example, stormwater improvements, of increasing the pump-and-treat capacity, of

removal of contamination, source terms, and as well the complementary work that's going to happen under the Port Hope Area Initiative in removal of those sediments.

What is going to be important, though, and as reflective in our sort of environmental protection framework, is that constant risk assessment, monitoring sort of framework that's going to happen, and will continue to happen sort of post-VIM. So it will be a very important, once the cleanup is done, that we get a sense of what our new baseline is, and from that we'll be able, then, to move forward and, again, assess the risk versus what was observed, adjust the monitoring as needed, and continue in that way forward.

MEMBER VELSHI: So is it a bit premature right now to see what the modelling may show as to what the levels are likely to be post-cleanup, the ongoing levels?

MR. McALLISTER: I would say -- I would observe that it likely is premature. There's a lot of -- with the dynamic between the sediments and those other sources; however, certainly to say that we would expect the harbour water quality to be improved.

MEMBER VELSHI: Thank you.

And then if you can comment on the 2016 maximum --

THE PRESIDENT: But before we leave this,

I would hope that before dredging starts somebody would have design objectives for what the end result will look like, in terms of water and all the remediation. Otherwise, if we do it in such a way that contamination starts accumulating again, what's the purpose?

MR. RINKER: Mike Rinker, for the record.

I want to make sure it's clear that the harbour water quality is already, even with the contaminated sediments in place, generally below the levels that are protective of the aquatic environment. We expect to see substantial improvement when the sediments are removed and when groundwater interception is enhanced.

What we're not certain about is, even though we're talking about a very minimal amount of contaminants in the harbour, you know, are the sediments the majority contributor, because that's not something -- that flux from the sediments up to the water column is not something that's very precisely measured, although we can measure the loading from the groundwater. But where is the biggest source it's not certain now, so to be able to predict what it would be is unclear.

But definitely, rather than a design objective, meeting the limits for the protection of aquatic life is a certain thing that we'll be measuring against.

THE PRESIDENT: Ms. Velshi.

MEMBER VELSHI: Through I would comment, as I look at your table 3.8, that currently, for fluoride and ammonia, it exceeds or is pretty much at the CCME level, so I wouldn't necessarily agree with your statement that the contamination levels are low.

MR. RINKER: Mike Rinker, for the record. In terms of design objectives for fluoride, for example, the source term for that is air and dust fall, as opposed to harbour sediment and groundwater cleaning.

Ammonia, on the other hand, is captured through the interceptor wells, and I doubt it very much that there is ammonia in the sediments. That's not a characteristic of low-level waste, so ammonia is a good signature for a sign of the groundwater interceptor wells.

MEMBER VELSHI: But post-cleanup, the expectation is that Cameco would -- the harbour quality levels would be below CCME. I mean that's the objective.

MR. RINKER: Mike Riker, for the record.

MEMBER VELSHI: Or expectation.

MR. RINKER: That is the expectation, yes.

MEMBER VELSHI: Thank you.

Sir.

MR. INGALLS: Dave Ingalls, for the record.

Just to touch on the fluoride and ammonia levels that was just being discussed as well, we do see fluctuations in those levels. For instance, ammonia we do see seasonal variation, and that variation is not occurring from our facility. It's due to other -- agricultural runoff, for example, going into the river, the Ganaraska River. So you do see seasonal fluctuations, and you continue to see that even post the remediation that's taking place in the harbour.

In terms of the fluoride, we do see again variation, and the levels that we're seeing are similar, are in the same range as what we're seeing in, for instance, drinking water intake levels going -- in municipalities, such as Bowmanville and in Cobourg, which are neighbouring facilities. We're also seeing the numbers of fluoride that are at times right up to the CCME guidelines in Lake Ontario.

MEMBER VELSHI: So I think we can understand where the source of the ammonia would be. What would the fluoride source be?

MR. INGALLS: Dave Ingalls, for the record.

I'm not sure what the natural source of that would be in the environment. Certainly in areas such as Bowmanville and Cobourg that would not be an influence

from our operations. It is coming from other natural sources there.

In terms of the uranium --

THE PRESIDENT: Before you go there, are you measuring, actually, whatever contamination there is in the Ganaraska River before it goes into the harbour?

MR. INGALLS: David Ingalls, for the record.

We actually do harbour water sampling in various locations around the harbour. I'm not sure if we do it in the river itself. I can ask Ms. Peters to comment on that. But our sampling campaign is multiple locations, both at surface and just above the sediment level. That is reflective of some of the variation that we see year to year in the uranium concentration in the harbour. So, really, the values we're seeing there are within the normal fluctuation we typically see.

If we were to draw that out over a much longer time period, we would see that it has pretty much plateaued down at a low level now, and there's some natural variation in that. If you go back 15, 20 years, it is considerably higher than the levels we're seeing today.

THE PRESIDENT: But wouldn't you want to know what goes into the harbour, because everybody accuses you about doing all kind of things? So the harbour, if it

comes from elsewhere, wouldn't you want to know about that?

MS PETERS: Rebecca Peters, for the record.

I would just like to say, first off, that the harbour and the impacts of different contaminants on the harbour have been modelled through previous risk assessments that we have discussed with the Commission several years previously. From those, there have been performance-based -- or risk-based performance objectives derived, and those -- that information is used in our Annual Groundwater and Surface Water Monitoring Report that is submitted to CNSC and Environment Canada and MOE annually, and Cameco is always below those performance objectives.

I think there's an opportunity for us to perhaps improve that information in the public, and we're certainly willing to do that. That's not as clearly as articulated, I believe, in our compliance reports as it could be.

With respect to your comment about monitoring in the river, we've done that on a periodic basis. But that is something we can take under advisement: to look and see whether that's something we should be adding to our routine program, as we look at revamping the program next year, to come into compliance with the other

CSA standards.

MR. THELEN: John Thelen, CNSC, for the record.

I just wanted to make it clear to the Commission, and to the public as well, that both Cameco and CNL have environmental monitoring programs. Those programs aren't static during the conduct of activities. In the case of VIM implementation, as well as Port Hope Area Initiative cleanup work near the harbour, there will be augmented environmental monitoring requirements, for example, during Centre Pier cleanup, along the mouth of the Ganaraska, into Lake Ontario, and into the harbour, to ensure that that work's being done in an appropriate way and making sure the surrounding environment is safe during the conduct of those activities.

THE PRESIDENT: Thank you.

Ms. Velshi?

MEMBER MCEWAN: He's asked my question, so I'm done. Thank you.

THE PRESIDENT: Mr. Tolgyesi?

Anything else?

THE PRESIDENT: I have two quick ones.

First of all, maybe it's now time to invite the other Ministry of Environment, at the federal level, to talk about the thermal impact on fish. I think

we are faced with this issue on practically every facility. What's the current thinking about that?

MS ALI: Environment Canada is aware that Cameco -- or has reviewed several of the studies that Cameco is doing on evaluating the fish species that utilize the harbour, as well as studies on the spatial and temporal patterns in these waters. So far, you know, we're satisfied with the work that's being done to assess this impact. If you -- Duck, if you want to give any more details, but generally we're satisfied with the work that's being done to evaluate the effects of thermal.

MR. KIM: Duck Kim for the record.

Yes, as my manager Nardia has indicated, we have looked at the thermal impact studies that Cameco has conducted. Though there were some exceedances of various thermal criteria at certain times of the year, primarily during summer and fall, we note that those are times when the species that are resident or utilized the harbour and the approach channel are generally transient. It's salmonid species like lake trout, rainbow trout, and chinook salmon.

So though there is an uncertainty during winter season that we are continuing to work with Cameco and CNSC to resolve, overall so far with all the data that

we've received, we are satisfied that the impact of thermal discharge in the harbour due to the operation of Cameco is not having a significant effect on the biota.

THE PRESIDENT: So you will keep monitoring. And Cameco, you will continue to monitor particularly during the VIM and the dredging. I don't know what the profile of the intake and outtake look like during operation during the dredging. I don't know if there's going to be any impact. But I assume you'll continue to monitor.

MR. INGALLS: Dave Ingalls for the record.

As part of our ECA for our cooling water system, we do have cooling water discharge limits on there. It's both a delta T and a maximum temperature which meet the generic water quality objective guidelines. We monitor that continuously, both the delta in the temperature and the absolute maximum temperatures going out, and we ensure that we're always in compliance with our ECA, which also meets the provincial guidelines as well.

THE PRESIDENT: CNSC?

MR. McALLISTER: It's Andrew McAllister.

Just to complement what's been said and really to get to the point that the intervenor raised, the exceedances that were noted were really limited spatially to around the mouth of the discharges. More specifically,

they were largely related to the one in the harbour and not in the channel, so to speak. So the concern about that thermal impact potentially impacting the Ganaraska River, we haven't seen any evidence of that. So that's just to address one of the key concerns that were raised in this particular intervention.

THE PRESIDENT: Thank you.

The last thing I raise, I hear in the intervenor kind of -- I'm paraphrasing -- plea for being better informed on an ongoing basis. So what kind -- is there a formal process to keep the community involved or understanding what's going on, particularly through the VIM process? So I want to know what Cameco is doing, I want to hear what CNSC is doing.

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

And we do have a mailing list that we maintain in relation to our activities. We talked about earlier this morning community forums and the like. And we ensure that in that mailing list the First Nations and the Métis Nation of Ontario are aware of those forums and other community events that we plan.

We talked about our public disclosure protocol, and on that website we do post unusual events or events that are reported to the Spills Action Centre, the

Provincial Spills Action Centre, as well as our look-through in relation to information that may be of interest to our target audience in accordance with 99.3.

So you mentioned a review of our public information program, and this is good input for us to take into account as we look at that program.

MS MURTHY: Kavita Murthy for the record.

So there were two aspects to the question. One was information provided as material is transported on the roads. There is no regulatory requirement that requires notification by entities transporting material. This is both for security and for practical reasons. But there is a very clear expectation if there is an incident on the road that there will be communities that have to be informed. But above and beyond all that, the CNSC regulates transport of nuclear substances through a series of safety centre regulatory requirements, which include the certification of packages that are used to transport radioactive material.

With regards to enhanced communication with Aboriginal communities, we have Adam Levine, policy officer, Aboriginal and International Relations Division, who's here to provide some information.

MR. LEVINE: Good afternoon. Adam Levine, Aboriginal Consultation Advisor for the Canadian Nuclear

Safety Commission.

So first of all, I just want to say thank you so much to Nicole and Kevin and the Mohawks of Bay of Quinte for taking the time to participate in this important process in their traditional territory. And I know this is important matters for them to ensure that the environment is protected. And there's a lot of synergy there with obviously the Commission's mandate in protecting the environment and also for us to disseminate scientific and objective regulatory information to the public and specifically with the First Nation and Métis indigenous communities in around the vicinity of the facilities we regulate.

And so we're definitely committed to continuing to provide information that's important to the Mohawks of Bay of Quinte. They've identified a number of different items that are of interest to them, and we'll continue to work with them and Cameco to make sure they're getting the information in a timely way so they can be part of the process.

And the offer is definitely there for us to come down to Mohawk's territory and their community to provide more information about the CNSC and how we regulate the nuclear industry and anything specific they have questions regarding in the facilities we do regulate. And

for example, we provide regular updates on our independent environmental monitoring program to the Mohawks of Bay of Quinte to make sure that they're getting the data that our staff are finding in the environment and giving an opportunity for the community to be involved in that.

But we really look forward to working with the Mohawks and Cameco on making sure they have the information that they would like to have.

THE PRESIDENT: But I hear what you're saying, but I think given the nature of this project and at the magnitude, and a lot of eyes will be in there, you heard about even the local municipalities like a standing process of consultation. I think you may want to structure it more so there's continuous update about what's going on in terms of the remediation, clean-up, decommissioning, et cetera, et cetera, a little bit more structured way. And of course we'll continue to demand such updates in the annual regulatory oversight about the whole project.

So on that note, do you have any kind of final comments?

MR. SHIPLEY: Yes, I just want to say thank you to the Commission for allowing us to make a presentation and have some input into this. I think it's an important process. I appreciate the commitment to provide ongoing information to the Mohawks of the Bay of

Quinte, and I agree that regular updates would be very useful as Cameco goes through this process.

I'd just like to emphasize that I think a principle of continuous improvement needs to be built into this licensing process as they go along through this licensing period. I'd like to see improvement in reducing the number of spills, reducing the level of contamination, reducing the air emissions. I think that needs to be an important objective that's all part of this.

And then again notification. The Mohawks of the Bay of Quinte use surrounding areas for fishing, gathering, hunting, and so on. So we actually -- MBQ is really a near neighbour and would like to be considered as such in terms of notification regarding any kind of incident that occurs.

So with that, I'll just say thank you.

MS STORMS: Thank you.

THE PRESIDENT: Thank you very much.

You want to break?

MR. LEBLANC: Yeah, sure. Twenty-five to.

THE PRESIDENT: Okay, we'll take a 15-minute break, coming back at 25 to. Thank you.

--- Upon recessing at 3:22 p.m. /

Suspension à 15 h 22

--- Upon resuming at 3:40 p.m. /

Reprise à 15 h 40

THE PRESIDENT: Okay, we are waiting to proceed.

The next submission is an oral presentation by the Canadian Nuclear Workers Council as outlined in CMD 16-H8.35. I understand that Mr. Shier will make the presentation. Over to you, sir.

CMD 16-H8.35

Oral presentation by the Canadian Nuclear Workers Council

MR. SHIER: Thank you. Good afternoon, Members of the Commission.

As indicated, my name is David Shier. I'm the national director of the Canadian Nuclear Worker Council. You'll also be hearing from my colleague Mr. Chris Leavitt. He's a past vice president of our organization and he's also a long-term employee at the Cameco site in Port Hope.

First of all, briefly, our organization is a council of unions in the nuclear industry across Canada. And one of our main goals is to be the collective voice of organized labour unions in the industry. And in regards to

this hearing, the two local unions of the United Steelworkers that you heard from this morning are active members and long-term members of our council.

And as our previous submissions, as you're aware, we emphasize the health and safety of the workers in these facilities. And in our written presentation we've indicated that we believe there's a good safety culture at Cameco and Port Hope here. And it makes my job easy today, because you did hear from the two unions this morning about their safety performance and safety culture. And also added benefit, I'd suggest, hearing from two of the actual shop floor workers giving their experiences of health and safety.

The other issue I'd like to touch on briefly, it's in my submission, is environmental issues and the kind of public perception. In the Port Hope area there is a lot of other nuclear workers that live in this particular area that work at, for example, the Darlington nuclear power plant and probably some people that work at the General Electric plants. And I think what that brings to the table is the idea that these -- there's nuclear workers that move in here. We've also heard of several nuclear workers retiring in this area. It would prove the point that we have that the community is happy with the facility here, has no issues with it, and is not -- it

feels like there's no environmental concerns.

So I'm going to stop here and pass it over to my colleague Chris Leavitt to give you more of a focussed view on the specific plant and views on the area. Chris?

MR. LEAVITT: Thanks, Dave.

Commissioner Chairperson, Commission Members. For the record, Chris Leavitt.

I've been employed at the Cameco Conversion Facility for 38 years, spanning five decades. I've been at that plant for one reason, one reason only: I consider it quite safe. I've held different positions within the plant as the union president spanning 15 years also. I was a member of the Health Safety Committee during that term. I've since gone back into the health safety foyer, so to speak, as a subcommittee member. It's quite valuable, those subcommittees and the work in which they do, the issues in which they can move forward on with Cameco.

With the -- just going back a bit -- as union president, I worked with various managers, site managers at the site too, which sit at the table over here, Dale and Dave, along with two other site managers. I can honestly say that paramount was first and foremost with them, safety was quite paramount with respect to health

safety and improving the safety record at the site.

I currently work in the materials handling department to which we package, transport, ship nuclear materials abroad and within Canada. I've witnessed changes over the years within my own department, thinking about it, ergonomic issues, reduction of radiation exposures, and conventional health safety. And I can honestly say that, once again, my 38 years there have been without a loss -- no lost time incident.

I have had a couple close calls in the past. There has been that vast improvement to health safety. I've really seen it I think fast-forwarding to about in the last 10 years at the facility. So it's really improved quite dramatically and, you know, I thank Cameco for that, for working jointly in partnership with the unionized health safety committee members and the formation of the CSSC. It used to be called the Cameco Health and Safety Committee, so I sometimes refer to that, so it's been a long time there, so.

I've served I guess 65 percent of my living life on this planet at Cameco, and I think I've got about two or three more years to go, so I'm looking forward to that.

I just want to say I've been in front of this Commission numerous times for licensing renewal -- I

think I was talking to Dave about this -- about four. I found your Commission to be very, first and foremost, an open dialogue with some of the people and the different groups speaking either for or against a licensing renewal. I found the reception by the Commission quite receptive and open. I've been at numerous ones including it was GE in Toronto. I was at that one. So I really thank the Commission for having an open sense of democracy, and I think I reflect upon the poppy as the -- what our veterans served, you know, giving up life or illness in respect to our democracy which we can sit here today and have free speech. So I thank you.

MR. SHIER: Thank you, Chris.

In conclusion, we naturally support the relicensing of the Cameco Port Hope facility and we support a 10-year licence.

And maybe for the benefit of some of the intervenors who are not in favour of the 10-year licence, I would tell the story that at one time the unions involved in the industry as well as our council did not like the long-term licences; however, we view the annual reports of the facilities, the staff reports of the oversight as the opportunity if there is any other issues that we need to be raised or have any concerns, we can raise them at that forum.

So it's not like you have to wait 10 years if you have an issue, so that is the position we have taken.

Regarding the -- again, the health and safety, we have an annual convention each year and members of the unions all give a report. And health and safety is an important one. And the Steel Worker local at Cameco here and at all their other facilities participate in that forum, and so any issues or any concerns. It also gives them an opportunity to look at best practice.

They talk to their other colleagues in the industry about any issues that they do have.

Over the years, many of our representatives have toured the facilities. Personally, I have been at the conversion plant on several occasions, so we witnessed firsthand the professionalism and the -- and as well as Chris indicated, over the years I saw the drastic changes in the health and safety as well, so.

And as one -- some people mentioned this morning, we just can't say this is it, we've reached it. We have to have continuous improvement, especially with the influx of new staff, and I'm sure the programs we have in place will work towards that.

So with that, we conclude that we are again in full support of the licence from the Council's

perspective, so we thank you for your time and we're open to any questions you may have. Thank you.

THE PRESIDENT: Thank you.

Questions?

Ms Velshi.

MEMBER VELSHI: Has the Canadian Nuclear Workers Council, given who you represent, considered undertaking a health study on your members?

MR. SHIER: We haven't looked at doing one individually in what respect as far as the -- what type of health study would you suggest?

MEMBER VELSHI: Or an epidemiological study. We've had a number of discussions about it over the last day or so, and I just wondered, you know, you, as someone representing the nuclear industry workers, has that ever come up as something that you would want to undertake.

MR. SHIER: We'll take that other advisement. If you could suggest maybe a sponsor for us as well, that would help. I have been involved in my previous life as a staff officer with the Power Workers Union dealing with health and safety issues where we were involved -- I think, the Cancer Institute did some studies and there were some other studies as well regarding specifically nuclear workers. But there was nothing that was strictly done by the unions specifically or

individually.

THE PRESIDENT: Dr. McEwan.

MEMBER MCEWAN: So can you just give me -- I've been meaning to ask this question over the couple of days. The A.Q. Evans Award, what's the history to it, and the significance?

MR. LEAVIT: Chris Leavit, for the record.

I was union president at the time that we received that A.Q. Evans Award. Basically, it's about how our health safety committee is performing. It is issued by the International United Steel Workers Union in Pittsburgh. Unknowingly that we were awarded that, I've got to say that the local, in working with the company, achieved that goal by working collaboratively together on different issues.

It just recognizes the work that the committee was doing.

And I could talk about -- I didn't mention I -- the work on the committee but also, too -- I know that you asked a question before, Commissioner Member, on the training that we -- what training trainers receive. I think you asked that question.

So I'm a workers' Health and Safety Committee -- or workers' Health and Safety Centre instructor, so I received off-site training with respect from that body which is recognized by WSIB here in Ontario

as being recognized to receiving funding for it.

So we did extensive training within our own committee, the local committee, and we worked very hard and diligently.

I was always after trying to improve our health safety to get a recommendation from the CNSC that we were excellent, and not just satisfactory. I wasn't satisfied, as Dave said, with the word "satisfactory".

I think I actually presented that at a committee of how do we get from that to being good or excellent because that's where I'd like to be -- our rating to be at, you know.

We also -- just a little bit of work, too, that our committee does, outside work of that. I know I organized the Day of Mourning -- I don't know if you're too familiar with it, Commission Members. But Day of Mourning is one that we wear the canary and it's about the 1,000 Canadians that die each year on the job, so we've got a lot of respect and work to do on health safety and continue to do so on site.

MEMBER MCEWAN: So the award -- so thank you for the background on the training. That sort of rounds that.

The award -- so it's given just once a year to one group, so this is a significant award.

MR. LEAVIT: Yes. It's a very significant award. In that same year, too, that Cameco received a site award -- I believe in the same year -- for the green award. I can't remember the first initial. Cameco could respond to that, but I'm trying to remember off the top here.

But that was quite significant to receive both awards in one year. I think it actually solidifies the work that we were doing on site. I think it was quite an accomplishment by the committee members, and it was a joint collaborative effort.

You can do it alone. You just can't. And Cameco, in speaking about the Day of Mourning, is the only company that does come out for the Day of Mourning, and they support, you know, the health safety of the work that our members do.

I know I've always been proud to mention it, that Cameco -- I would say about five management people continuously to come out and support that. That was right from Bob Steen days when he was the manager of the site.

MR. SHIER: If I could just -- Dave Shier, for the record.

If I could just add one comment about that award. It is an honour for the local union people to receive that because the United Steel Workers is the largest union in North America and they are -- the union is

very, very active in health and safety. So when you get a large union of that magnitude recognizing a local committee, it is quite an honour within the labour movement.

THE PRESIDENT: M. Tolgyesi?

MEMBER TOLGYESI: Just one I have complementary to Mrs. Velshi's.

You know, this morning -- and I think you were there. There was a Northern Ontario School of Medicine, they are doing studies, and they are looking because they are shift in the financing of these studies. They are looking for sponsors and they are looking for companies. And I think that it's a great opportunity to join you guys, the companies, to make these studies and to give the study more credibility and it gives also to you information what you should do.

So that's a thing what I think you should consider.

MR. SHIER: Thank you. We'll take that under advisement.

THE PRESIDENT: I just have one question.

In your page 2 here, you talk about CNWC activities, and third bullet is "Enhance public knowledge and understanding of nuclear issues by providing factual information."

So what do you do this? Do you send it to the community members?

I know you issue newsletters which many of us receive. Is there anything that you actually do to the public?

MR. SHIER: Dave Shier, for the record.

That's an all-encompassing one. We dialogue with a lot of unions at conventions where some of the public comes in. We have a display booth. We distribute information, answer their questions.

We coordinate local labour councils for tours of the -- we have arrangements with the power companies to take tours in there. For example, we're also working with getting a tour of the NDP Party in Ontario into our Darlington facility. We've had some discussions with them at a lobby we did in coordination with the Canadian Nuclear Association a few months back.

We also get calls from the public at different times, too, from our web site, so it's kind of an ongoing thing that it's part of our mandate to kind of help educate people on what the workers in the industry do, so it's quite -- it changes each year depending on what's going on, but that's kind of an overall view of how we get that factual information out.

THE PRESIDENT: Okay. Thank you.

Anything else? Thank you very much.

The next submission is an oral presentation by Mr. Rudka as outlined in CMD 16-H8.10.

Mr. Rudka, the floor is yours.

CMD 16-H8.10

Oral presentation by Dan Rudka

MR. RUDKA: Thank you very much, Mr. Binder.

Members, Board, Commissioners, I appreciate being able to speak with you today. I've been listening to things on the CNSC side and Cameco's side and, for the most part, we've been seeing a wonderful little package put together, a lovely little box with a blue ribbon on it or whatever you want to call it, and today I'm here to tell you when you open the box and look deep in the corner, this is what you find, and I am not the only one. I make that very clear.

I'm a former nuclear energy worker, a victim on inhalation of radioactive material. And I understand the dangers of radioactive and chemical emissions that the CNSC and industry incorrectly accept as low risk in workers for the public.

Understanding the breakdown in health that

results after radiation exposure, my contamination is apparent. It started with nausea, vomiting, nosebleeds, exhaustion, severe sweats discolouring my clothes, stomach and bowel illness, radiation burns, scarring of the skin, shortness of the breath, lung disease, eventually oxygen. Cataracts, eye surgery, red blood cell production stopped. I became anaemic.

Over the years, bodily and bone deterioration, bone infection of the sinus requiring multiple surgeries and titanium plating, deteriorating osteoporosis, immune system failure. Eighteen (18) months ago, lungs failing rapidly. I was most fortunate with a life-saving double lung transplant.

And still, cancer looms. And regardless of what you've heard today about nuclear medicine, chemotherapy's not an option. Nuclear medicine is no longer an option to me.

And Cameco's position regarding the Worker's Safety Board and insurance in my claim, they will review my file and quote, "in case we have to go to battle".

Now, the WSIB has since noted possible inappropriate activity by the company regarding my claim. Contaminated workers need company support, and not a battle.

Considering obvious risk, Cameco should be ashamed in not assisting us. In the U.S., the policy assists and compensates nuclear workers that have been exposed.

In 2007, testing proved evident inhalation exposure of radioactive material to workers and public.

Patsy Thompson of the CNSC commented that insoluble uranium particles will stay in the lung for a very long time, and with soluble uranium particles also being released, making "dose assessments conservative".

Understanding that insoluble uranium will stay in the lung for a long period or permanently, understand that insoluble uranium inhaled will travel through the nose, sinus, and the nerves to the frontal lobes of the brain, and also remain there. Whether a victim of inhalation shows immediate symptoms or not, they have been exposed and at risk.

Radiation with a latency period does cause cancer. Various cancerous issues like lungs, brain, oesophagus among them are present in Port Hope, possibly over the average. My diagnosed lung disease long before transplant was extremely rare, but radiation was related. Less than 200 cases worldwide.

Inhalation is recognized as the most

dangerous method of radioactive exposure, 200 times more dangerous than any other method of exposure.

The National Academy of Science states, contrary to what you heard from the Northern School of Medicine, that there is no threshold of exposure which low levels of ionizing radiation can be demonstrated to be harmless or beneficial. And it is ionizing radiation we are dealing with in Port Hope. We're not talking about airplanes flying in the air. A totally different game they were playing there.

The Committee examining risk radiation of internal emitters, the CERRIE report, explains that where hot or warm particles or plutonium or uranium are located in body tissue or where sequentially radio nuclides like strontium 90 are organically bound, examples, DNA, brain, lung -- excuse me -- dose means nothing. When it gets there, dose means nothing.

Consider the Port Hope Area Initiative, the removal of radioactive contamination throughout Port Hope, then continue allowing radioactive emissions from Cameco, risking public health, continuous air emissions, the worst kind, and after the land is renewed for public health and safety, this is an exercise in a waste of taxes. That's all it is.

Now, consider nuclear worldwide. New

technology, environmentally friendly sources of energy, less need for nuclear, countries Reconsidering options, locally, the Port Hope Area Initiative far behind schedule, the nuclear future is changing too rapidly for a 10 year operating licence of an old nuclear facility that has been mentioned is leaking.

The suggestion by Cameco a 10 year licence would accommodate the Vision in Motion project is weak in necessity. With Cameco's falling stock values along with Revenue Canada's interest in \$2.2 billion of questionable taxes, could the company shut down the facility within 10 years? Would the plant be immediately decommissioned, or would they wait it out 10 years?

A three year regular licence renewal would ensure the CNSC better knowledge of Cameco's operations, regular reports on all efforts or incidents, the population of Port Hope would be better informed, with continue regular continuity, and these hearings are informative, and regularity should not be denied to the public in such a close proximity to a nuclear processing plant.

A three year licence would allow time to plan and begin to implement a zero emissions project. Zero emissions left to a 10 year licence would take 10 years to begin or plan. Emissions concerns should be vital to Cameco and the CNSC, and need to conclude with no

radioactive emissions onto this population, with no buffer zone protection, and it exists in a small enclosed ravine town where one evening, at town hall, my personal dosimeter, I picked up a dangerous radiation background.

It didn't say high. It said dangerous, meaning leave the area immediately. This was an evening in Port Hope's town hall.

Excuse me for one moment.

Now, the CNSC's responsibility for safety of nuclear workers and the Canadian population is a concern that has developed over 20 years of experience with nuclear exposure reaction within the nuclear industry and the CNSC. Past incidents reported to the CNSC have been excused.

For example, the circulation tank at Port Granby labelled hydrochloride acid continued leaking for over one week, explained by Cameco to the effect that the leak was residual, acceptable, only lasted a day. Well, that was accepted by this Board, but I was a witness to it. I checked it daily. It leaked for a week, and nothing was done.

Now, netting over Port Granby holding ponds to protect waterfowl and those that eat game birds suggested and agreed in 2008 begrudgingly by the CNSC that it could be done, but it never was.

And I've discovered CNSC transcripts

missing, statements missing, not being informed as requested of public events. Tomorrow's hearing was news to me when I got here the other day. I had no idea of that. I was not informed, nor was I informed of CSSC 101 -- CNSC 101 in Port Hope. I was denied that.

After advanced urinalysis testing, the CNSC's Patsy Thompson agreed, signed a paper regarding spent reactor fuel, U236, discovered in local nuclear workers that U236 at these very low levels could be a remnant of atmospheric nuclear weapons or a minor release from nuclear facilities.

Well, civilians tested indicated no evidence of U236. Ms Thompson was wrong regarding atmospheric fallout. She has also disputed with me that U238 and 228 in a reactor does not necessarily result in U236 spent reactor fuel.

Company processing of U236 was not licensed. The company in non-compliance violated their licence agreement with the CNSC, and the CNSC did nothing. However, the CNSC regularly fines and suspends smaller companies' licences for non-compliance.

Former Chair of this Board at one time, Linda Keene, directed Health Canada, the company, union, the CNSC to make an effort to assist this personal contaminated former nuclear worker. Nothing has been done

or followed up by the CNSC.

When uranium medical research centre found civilian and worker exposure to radioactive isotopes through urinalysis, the CNSC, Health Canada attempted to excuse the testing. In reality, testing should have been offered to every citizen of Port Hope that wanted to be tested, including nuclear workers.

And regarding those that were already tested, CNSC passed up a grand opportunity to work with us, learn for the sake of others.

Over time, on several occasions, being a small town, words gets around, including I'd -- this was also brought up including a meeting with former Vice-President of Operations, Mr. Andrew Thorne. It has been brought to my attention on several occasions that my personal exposure from inhalation contamination was not an accident.

In fact, a criminal act was a deadly assault. It was the first of two assaults at that facility.

I informed Mr. Thorne that holding information from the police regarding this criminal act, he was liable and responsible. As the VP of Operations for Cameco, he should have acted on the information, and I suggested he further consult the company legal advisors.

Mr. Thorne was transferred to the United States several weeks later.

Both incidents were reported to the police. No notes, no investigations. In fact, there's a similar background to that of our since deceased friend, John Rainbird, had the same kind of difficulties that I've had.

From experience, the CNSC nuclear safety regulatory is not effectively protecting the people, their first and foremost concern. I have seen that there has been a change from the costly regulatory system to an even more costly, less effective, promoter of and advertiser for the nuclear power industry.

Watching as true witnesses to violations and concerns with the nuclear industry are put through the worst of experience as they present to the CNSC expecting advice and assistance, only to become unsupported social targets. I always wanted to believe the CNSC is truly watching out for Port Hope's people. How are they going to want to come forward and complain if they go through what I've gone through, or others?

The CNSC external complaints whistleblower states the CNSC addresses activities, facilities regulated by the CNSC. Wrongdoing, harassment, intimidation, retaliation and discrimination, work environments to

discourage workers from raising safety concerns or other matters. Misconduct associated with CNSC employees.

At what point does the CNSC put external affairs into action, their external complaints, into action? What does the CNSC Board -- and the Board think that so many of us have been putting so much at risk have been doing for all these years?

In conclusion, the CNSC needs to enforce a three year licence period for Cameco renewable every three years for the life of the local industry. A commitment from Cameco to reach zero emissions. It can be done. It's going to cost, but it can be done. And failing that, relocating the operation off the waterfront, out of the town and away from the public.

UMRC, that's Uranium Medical Research Centre, or similar advanced independent urinalysis testing for all local public requesting so to allow the CNSC to monitor the true exposure levels of the local population and study those showing exposure comparing to those not showing exposure.

Regular mandatory UMRC or similar advanced independent urinalysis testing for all nuclear energy workers to include reporting to the CNSC for monitoring of exposure levels and isotope identification of radiation type, also to be used and an order to insist for

consideration of future health-related compensable issues in workers. And this is something the United Steel Workers should have been asking you people for for a long, long time, and I have had to do it independently.

And from the CNSC, finally, a much more concentrated approach to nuclear operations in Port Hope, including a serious comprehensive change in effort from the CNSC to study and understand the psychological, physical health and wellbeing of the population of Port Hope, and I will include in that the nuclear energy workers.

I'd also want to say we've heard about many, many studies here today and many, many awards. Nobody has had the nerve to come up and study me and nobody has offered me an award for what I've survived through.

Thank you very much.

THE PRESIDENT: Thank you. Any comments?

MEMBER MCEWAN: I know you sat and listened through the Northern Ontario presentation, what were your thoughts to this is new science? It is science that is trying to understand at these dose levels. So what were your thoughts and have you done any reading around the background?

DR. RUDKA: Immediately what I thought was I thought it was a presentation by Donald Trump, I'm sorry, as it was comical to me. I mean, they're telling me that

they're not harming mice. Now, look, this stuff gets onto a cell, it damages a cell. Insolubles, some of the things that they were talking about are not related.

We're talking about insoluble ceramic manufactured material, where they were comparing to flying into the sun or being out or sleeping next to your spouse. If that's the case, you know, I can't take anymore radiation, I don't want to sleep with my spouse tonight, not if I'm going to get 20 mSvs. No, I don't believe it.

Because I have said to you here in one report that there is no level of radiation that is harmless, and I totally agree with that. I have seen from my experience in what I have done and what I have researched and studied. I dare say that as far as health goes, from my personal experience, I'm probably the best expert here that you could talk to about uranium health and its effect.

What I thought about what they had to say was that I thought a great number of my doctors would totally disagree with them and call it some other form of medicine. What I think is that they're getting a great deal of funding from the nuclear people, so they're going to work in that direction, where they get their funding, so they can do other things.

To me, it's a promotional thing, it's

misleading the people, and personally I think it was rather shameful from any school of medicine. Because I could, if the doctors would, bring them in front of you today it would contradict that. But they're afraid to speak up too. The reason they're afraid is one of my doctors has been interfered with, I'm not sure by how, but he wants to change his diagnosis on me after he wrote it up very clearly as to what it was. He won't change it, I won't allow him.

So, no, I don't agree with that medicine. I think that they're leading people in the wrong direction, trying to make nuclear acceptable. I mean, the bottom line is this stuff is not safe, and if it's safe and you think it's safe, then what are we doing here today? We are here for the reason of health. It's all about health. That is your bottom line here. It's not the pollution of a water and everything -- yes, that's all part of it, but it's the water that gets into the people, it's the air that gets into the people.

So, no, I can't believe...

I mean, I'll give you an example of what they said. I had to have an x-ray. They don't practice nuclear medicine on me because of my exposure and double lung transplant, I still have to go through some of that. I had to have an x-ray of my head, unfortunately, I was ill

the next day. I was numb-skulled, bedridden, felt sick, and that's what that did to me.

So no, you know, nuclear medicine is not the answer. What is shows is after an accumulation -- I've had an accumulation, so I can't even take something like simple x-rays without feeling that.

On the other hand, you people can take multiple x-rays without feeling anything. But if you get an accumulation over on top of that, well all that accumulation, you're going to feel something.

MEMBER MCEWAN: Just one final question. How long were you an nuclear energy worker?

DR. RUDKA: How long was I?

MEMBER MCEWAN: How long? Yes.

DR. RUDKA: I was employed over a period of two years, but I only worked 53 weeks within the plant, and I was working with enriched uranium, spent reactor fuel, and that was without my knowledge. At the time, I did not know I was working with enriched uranium. They just called it boost. Of course, they didn't tell me I was dealing with spent reactor fuel, which they weren't licensed to even deal with.

THE PRESIDENT: Ms Velshi.

MEMBER VELSHI: You've heard over the last couple of days a number of chemical employees come and

talk. In fact, I don't think at any of the hearings I've been at we've had more employees come and give their personal stories, their heartfelt stories and, from their perspective, what a great, safe workplace it is, and they live in the community.

Have you had a chance to speak to them, and what are your thoughts on what the current operations are then?

DR. RUDKA: Well, I think it's safer than it was, I think there is improvement. I also think there's a certain demographic of workers that will not speak up, there is fear. There's fear within the CNSC, members themselves, about speaking up. That's been proven before in studies.

Workers won't come forward. I've come forward because of, well simply, what am I supposed to do? Look what I've been through and I've survived it. I shouldn't have, okay. I know of other workers that I have worked with that are since passed from cancers, some suffering horribly.

So I mean I hear this from the workers and they've not been contaminated themselves, they're not having a problem right now, but there's also in-house emissions, they're also inhaling this stuff. In time, you know, I mean there's latency periods, 20-30 years, these

guys get out, they retire and they're all setup for retirement. As in one case, he was retired for three months and dead, just like that. He didn't have any problem until he retired, they showed him cancer, and died.

So, no, I understand that the workers believe they are safe. If uranium smelled like a skunk, this town would clear out. But we don't have -- it doesn't smell, you can't taste it, so you don't know it's there. So they're not feeling it, they're not feeling it now.

I have doctors -- I had a situation, one of my fingernails fell out. The doctor that spoke to me talked to me about the workers at Darlington and Pickering that come into him with skin and nail problems. He asks them, "Do you think it's related?" The all go "No, no, no it's not related." I think there's a partial belief within the workers they don't want it to be related.

Please understand, I was not really an anti-nuclear person when I went into that plant. I was anxious to learn and understand. But with what I have learned and come to understand, it's scares the hell out of me. I mean, it's almost killed me several times over.

I guess part of the big problem is too is that they're helping people here, we're helping people here, they're working together there and everything. We lost a house, we lost a whole pile of things and nobody

stepped up to the plate to help. As you see, to fight them with compensation, they're ready to go to battle. This is not what should be expected of workers or of the public, if that's the case too.

THE PRESIDENT: Okay, thank you. Thank you for your intervention.

The next submission is an oral presentation by the North American Young Generation in Nuclear - Durham Chapter, as outlined in CMD 16-H8.43.

I understand there are a few of you, so it says here Mr. Mutiger, I don't know if I'm pronouncing it properly, will start. Go ahead.

CMD 16-H8.43

Oral presentation by

**North American Young Generation in Nuclear -
Durham Chapter**

MR. MUTIGER: Ray Mutiger, for the record.

Good afternoon. I am a member of the North American Young Generation in Nuclear - Durham Chapter. I have worked in the nuclear industry for over two years and enjoy the intellectual challenges it presents everyday.

I am proud to work in an industry where safety is the paramount consideration regardless of the

demands of ready and reliable energy expected by the public of Ontario.

Port Hope's Conversion Facility provides the means for our province's nuclear reactors to continue to operate and produce over 50 percent of Ontario's energy demands.

I am here today with my peers to share what a 10-year licence renewal for Port Hope means to young professionals supporting the nuclear industry. We wish to share our personal reflection of what it means to support the nuclear industry and the opportunities it provides.

MR. MAIRINGER: Matthew Mairinger, for the record.

I am the current Vice-President of the NAYGN - Durham Chapter. I have three years of experience working in the nuclear industry and I have a bachelor of nuclear engineering degree from UIT.

As young nuclear professionals, we believe that it is important to invest in energy solutions which provide a dependable, clean, source of electricity to Ontario residents.

The Port Hope Conversion Facility provides intermediate products required to run the minimal carbon emission nuclear generating plants. The lifecycle greenhouse gas emissions from nuclear are far less than

fossil fuel sources and comparable with wind and solar. Nuclear power is also the most efficient means of electricity production in terms of land use, producing almost 30 times more power per square kilometre than wind.

From the Port Hope Conversion Facility the public dose resulting from operation has consistently been well below the regulatory limits. From 2010 to 2014 the maximum effective dose to a member of the public occurred in 2012 and has a dose equivalent to ingesting the 300 grams of brazil nuts I hold in my hand. On a personal note, I chose to study nuclear engineering because I strongly believe it is the best solution going forward.

I have personally visited Port Hope and toured the Port Hope Conversion Facility, and was impressed with the professionalism and the operation of the facility.

I believe that the Vision in Motion project will provide a long-term benefit by cleaning up buildings, removing contaminated soil and material, and by improving the environmental performance and operational efficiency.

Thank you.

MR. BAYTEKIN: Alim Baytekin, for the record.

I am the President of North American Young Generation in Nuclear - Durham Chapter. Today, I am here to

support the licence renewal.

Port Hope is about community. Port Hope won the Heritage Achievement Award in 2015 and Cameco has been a supporter of maintaining this heritage with its donation to the Capital Theatre.

These facilities need local community to support the progress and produce the fuel required to supply over 50 percent of Ontario's energy needs. They need educated individuals to manage and maintain the technology that benefits the people of Ontario daily. These facilities allow youth in high school to have a goal to aim for higher education, to work in high advanced industry. Great heritage community needs more job opportunities to support soci-historical growth. More jobs mean stronger community interaction, happier community lives and a brighter future for the young generation.

Another 10 years allows them to strive towards supporting the nuclear industry and their community of Port Hope. I live in the Durham Region and I believe the licensing renewal will support Port Hope's community heritage and continue to preserve the 200 years of the town's history.

MS ROWAT: Rachelle Rowat, for the record.

I completed my third year of Mechanical

Engineering at the University of Ottawa. Currently, I am working in the nuclear industry as a performance engineer. I am also a member of the North American Young Generation in Nuclear - Durham Chapter.

The Nuclear industry is an incredibly challenging and very rewarding career. I support the 10-year renewal of the operating licence for the Port Hope Conversion Facility, as it offers numerous benefits to the economy. Cameco is proposing, within their licence renewal, to undertake a major site cleanup for the VIM (Vision in Motion) project. VIM will improve public access to the beautiful waterfront by returning Centre Pier to the Municipality. VIM includes removal of underutilized buildings, stored waste and building materials. Some waste will be transported to a long-term waste management facility being constructed by Canadian Nuclear Laboratories.

Associated infrastructure and building modifications will continue to be implemented. Undertaking a project of this size will provide job creation for individuals in all trades.

Currently, the Port Hope Fuel Conversion facility employs approximately 350 people, 40 percent of these employees reside within the Municipality of Port Hope. With allowance of a licence renewal, these

numbers could increase. This makes a positive impact on my graduating peers by creating jobs within the local community and making a positive impact on our unemployment rate in Ontario.

As a young individual within Nuclear, I welcome the opportunity to be a part of the VIM project in support of the community of Port Hope.

The Port Hope Conversion Facility plays an important role in supporting organizations and community events. It has brought employment opportunities to my family, as my Opa constructed the original mixers for the fuel pellets. It played an important role then, as it does now, and will in the future. Their contribution will ensure a sustainable community for years to come. I look forward to opportunities for it to play an important part in my life as well.

MR. SALIBA: Michael Saliba, for the record.

I have 3 years of experience in the nuclear industry. I Graduated with bachelors of nuclear engineering from UOIT and am currently pursuing my masters in nuclear engineering also at UOIT.

Risks. Each of us has their own personal tolerance for taking risks. Some enjoy adrenaline-filled

sports such as race car driving and bungee jumping, others are okay with the potential injuries associated with lacrosse or hockey. What we all have in common is that we understand that the risks are there and most of us, I would say, attempt to lower the chances of those events from happening, either by wearing protect gear while playing sports or designing a race car with a roll cage to protect the driver in the event of an accident.

I can personally say that my views on risks have changed substantially from before and after working in the nuclear industry. Such as our day to day activities, working in the industry has its inherent risks, however how those risks are managed and mitigated has no less than altered my entire perspective on how I perform my own day- to-day tasks.

The quantity and quality of procedural and physical barriers in place to protect personnel, the public and the station from the consequences of these inherent risks is astounding. Because of the safety philosophy and culture the nuclear industry has imbedded into each and every one of its employees, I feel safest when I am at work.

I have also had a chance to visit the Port Hope Conversion Facility and have seen, first hand, that

their trained and competent staff have safety in the forefront of their minds. For this reason, among the others discussed by my colleagues, I strongly believe the Port Hope Conversion Facility has earned the opportunity to continue being a pillar of safety in the growing Port Hope community.

MR. MUTIGER: Ray Mutiger, for the record.

The Port Hope Conversion Facility, run by Cameco Corporation, is qualified and competent to continue to run the facility in a clean and environmentally responsible manner. It provides a goal for the young generation in school to strive for and provides the foundation for a starting young professional to plant roots in the nuclear industry.

In conclusion, the North American Young Generation in Nuclear - Durham branch strongly supports the 10-year licence renewal of the Port Hope Fuel Conversion Facility.

Thank you.

THE PRESIDENT: Thank you. Ms Velshi?

MEMBER VELSHI: Thank you. Any of you work at the Port Hope Conversion Facility?

MR. MUTIGER: None of us currently work at the Port Hope facility.

MEMBER VELSHI: How many of your members

work at the Port Hope Conversion Facility?

MR. MAIRINGER: Matthew Mairinger, for the record.

We have 700 different members in the Durham Chapter, most work at OPG, but we don't know the exact number that work at the Port Hope Conversion Facility. We are the farthest east chapter besides Point Lepreau, so there's a large gap for our chapter between us and Point Lepreau.

MEMBER VELSHI: I know we've asked you about your demographics earlier today. Do you have many young members who may be part of North American Young Generation?

MR. INGALLS: Dave Ingalls, for the record.

We do have a number of young professionals that have started recently at our facility, generally in engineering type roles. I can't say how many of them belong to the North American Young Generation in Nuclear, but certainly we do promote the young generation coming into our organization and also sponsor through activities such as co-op programs as well to get university students in the engineering and nuclear engineering programs involved in our operations.

THE PRESIDENT: Dr. McEwan.

MEMBER MCEWAN: So you're all at the beginning of your careers. Broadly across the industry, I'm guessing you work at different sites. What's the level of mentoring and career development -- pathways, career development opportunities, career development training?

MR. BAYTEKIN: Alim Baytekin, for the record.

I am currently working in one of the nuclear facilities that they produce Ontario's energy. As a person with engineering background, I did the artificial intelligence, so I never had the nuclear actually as a background before I started to work for the facility. So the training actually focuses on for the young generation or, we call new grads people.

Basically, you do your basic training, you try to understand what is the nuclear, what is involved within the nuclear. They have these rotation programs that you're actually exposed to different departments or the different part of the facilities to learn how the operation works, how the maintenance works, how the engineering, or within the regulatory part, here's how it works.

We think that around two years you're actually experienced enough to put your hands onto the job, which you start to put your hands in the work and try to understand.

So what I do is mostly design perspective, so I try to understand what are the rules and regulations, what are the standards, and within the standards what are the CNSC requirements, what are the design bases, or what are the beyond design bases limits.

So this training actually being promoted, as required for your job tasks, day-to-day basis, or yearly. Also we're educated under continuous training. So once we train, we don't stop, we continue to train ourselves, either reading our manuals or either reading the procedures or we try to keep ourselves up-to-date with the rules and regulations that are provided for us to move forward.

MR. MAIRINGER: I just want to add a small point to that. I work at OPG, at Darlington. We have a specific mentor and mentee program where the young people coming into the company are taken under the wing of an experienced person. They can also choose their mentors on the company, so many times they'll reach out to an experienced person in their desired field and they can get experience with that person.

On behalf of NAYGN Durham, we have professional development events, we have lunch and learn events where they can have a seasoned speaker come in, give us specific technical talk in that regard.

As Alim was saying, when you become a new grad with a company you do two different rotations in two different plants, in two different sections. Then you have to go through your qualification training before you can sign off on any documents.

Thank you.

THE PRESIDENT: I'm glad to hear that you actually told us where you work. Is there a particular reason none of you want to identify where you're actually working? Is that kind of a policy of your little organization?

MR. BAYTEKIN: Today actually we're currently not presenting the company, but to present the idea of the nuclear and the nuclear facilities that the benefits are for the society, economically, or for the countries or for the provincial benefits. So we're actually representing North American Young Generation in Nuclear - Durham. So we cannot actually say that we are working for that company, because we are not here to represent them, but representing the flows of the nuclear benefits.

Thank you.

THE PRESIDENT: You can do both, eh? I don't see the conflict here, because you say you're working in the nuclear industry, so it's not a very informative piece here.

MR. MAIRINGER: Matthew Mairinger, for the record.

We all work at OPG, so we didn't want it to look like we were all coming forth on behalf of OPG. We're here independently, North American Young Generation in Nuclear - Durham Chapter. So we thought if we all said we worked for OPG there's kind of background incentive there, so... But there is none.

THE PRESIDENT: Okay. So let me be really difficult. So you have any American representatives here? So you're not even the true North American representative here.

MR. MAIRINGER: We represent our local chapter here, but there are 109 other chapters and one in actually Mexico City.

THE PRESIDENT: Right. Monsieur Tolgyesi.

MEMBER TOLGYESI: So what I understood is that you are mostly working for OPG. What do you know about the Port Hope facility? How do you know its performance deserves a 10-year licence? What are you defending? Do you know their operations? Do you know how the safety is working?

MR. MUTIGER: Ray Mutiger, for the record.

Previously, I was also the NAYGN UIT Chapter Branch President when I was a student at school. I

would say our NAYGN organization also encompasses the views of -- we work in collaboration with them as well. So our views aren't necessarily representative of our company, we wanted to ensure that we captured everyone's view.

MR. MAIRINGER: I'll just add another point for this. So those of us that are nuclear engineers that took it in school, we had a specific fuel conversion class, so we learned about the fuel processing cycle. So through that background knowledge we do have some understanding of the uranium hexafluoride, the UF_4 , U^{308} , the conversion cycle.

Through our plant tour we learned firsthand actually their procedures, we saw the day-to-day operations being done. Through our coworkers that also work there, we have great respect for that. Just also through the CNSC's regulatory oversight report, we went through that, said it was fully satisfactory, that does give us confidence as well in the continuing operation for the 10-year licence renewal.

MEMBER TOLGYESI: So probably I will tell you, maybe you should ask to visit the facilities because they are quite open. They were saying they have open dates and visits, and for your young Chapter, as you are operating in this sector it would be good to visit other sites.

MR. MAIRINGER: Sorry, I just want to clarify. We have been to their site. We have been to the fuel manufacturing facility and the Port Hope conversion facility with our Chapter. I think we had around 40 attendees and that was in 2015.

THE PRESIDENT: So you heard some intervenors that have worries about the safety aspect in this particular industry. You guys are not concerned with any safety issues?

MS ROWAT: Rachelle Rowat for the record.

I just started in the nuclear industry this year, so I am completely new to the workplace because I am just finishing my third year of university. So I have just started and I have a huge amount of appreciation, that I have gained from being in the nuclear industry, with the rigorous safety that is required to complete each task. I have sat down with the Chem lab, with the monitoring crew, with the guys that work on the shop, and the amount of procedures that they go through in compliance and the collaboration of all of the employees, it shows the amount of safety and how everyone cares that at the end of the day every single worker is allowed to go home safely to their families every night. And whether it be at OPG or Cameco Port Hope Conversion Facility, the amount of rigour and safety is imperative and it has been displayed today and it

will continue to be displayed. So there are no worries for the amount of safety because each and every person is committed within the companies.

THE PRESIDENT: Thank you. Thank you for the submission.

CMD 16-H8.31/16-H8.31A

Oral presentation by the

Restore the Port Hope West Beach Committee

THE PRESIDENT: The next submission is an oral presentation by the Restore the Port Hope West Beach Committee, as outlined in CMD 16-H8.31A.

I understand that Mr. Smith will make the presentation.

MR. BERGER: Mr. Berger.

THE PRESIDENT: Mr. Berger, okay. I just read what I'm told to read.

MR. BERGER: Hi. My name is Denis Berger. I am a member of the Restore the Port Hope West Beach Committee.

Sitting to my left is Doug Smith, who is the founder of the Committee.

Behind me is Richard Ciano, who is a certified marketing research professional from the firm

Campaign Research.

It's a pleasure to welcome you to Port Hope and I hope you find some time in your busy schedule to find out why this town was voted best place to live or to visit by TVO viewers, Reader's Digest, MoneySense magazine and Cottage Life, among others.

I realize this slide is not the slide I was expecting, so if you would. Okay, perfect.

They say a picture is worth 1000 words, but if it was possible I would like to take every one of you, pick you up tomorrow at your hotel before the beginning of your last day of hearing, and I would take you down to this awesome stretch of beach that we have here called the West Beach. It was originally called The Beach because it was the only one that was really used. And I can tell you, this picture and this one are not photoshopped.

It's less than an hour from Toronto and the vastness of the waterfront is such that some people, short of the salty smell, could mistake it for a stretch of ocean shore. It's unperturbed. Its visibility, its site is unperturbed by anything but cliffs, sky, water and beaches.

But there is something odd about it, it's devoid of people most of the time. If you read our Port

Hope restoration document that was part of our package that you received, you would have found out why and the reason is it's because of its toxic industrial legacy.

In 2002, the town and Cameco started preliminary work toward the rehabilitation of its waterfront land and facilities. Two projects were started, the Cameco Vision 2010 as it was called then and a document for a joint effort between Cameco and the Municipality of Port Hope called the Consolidated Master Waterfront Plan.

Our committee approached the town with ideas and suggestions as well as artist renderings that we had commissioned to help to assist them in the beach design aspect of the plan, but we discovered that the West Beach was not to return to a recreational status as we had hoped as part of the Consolidated Master Waterfront Plan.

Then we learned of plans by Cameco to have a visually and physically imposing Ring Road to be built literally on an environmentally sensitive portion of the beach. The loss of this land required for Cameco's new entrance is too great and will limit restoration plans and subtract considerably from the natural beauty and enjoyment of a proposed recreational park.

Our work has been made difficult right from the start by actions from Cameco. Our early attempts to meet with Cameco in 2014 were denied. Again in 2014, in

Cameco's annual report to the CNSC, Cameco denied our existence by stating that no requests were received to meet with outside groups that year, this in light of the fact that our group was very vocal, speaking out against the Ring Road aspect of their Vision in Motion plan, which it was called by then.

At a 2014 spring public forum, Cameco Vice President Dale Clark was told by a committee member that their 2013 annual phone poll summary showed concern from the public over them intruding into waterfront land. He was asked, "Why not put this concern as a question in your 2014 annual phone poll?" His answer was, "Next question."

At the start of Cameco's Vision in Motion presentation to open Council in 2015, the presenter started off by stating that he would only take questions afterwards from Council. Our presence was known and we were not allowed to ask pertinent questions that could have made the Ring Road a subject made aware to the public.

And finally, the CNSC announced the June 30, 2016 deadline to submit an application for funding to intervene at the Cameco licence renewal hearing. Late in the business day of June 30th of this year, Cameco released on their website details of their licence renewal information. How can anyone read, digest and apply for funding with this timeline, which was obviously planned.

When we finally managed to meet with them, a deal to buy some land from Cameco as well as an agreement to build the Ring Road, which is the Choate Road extension also known, was already concluded.

We met with Vice President Dale Clark a total of three times, accompanied by the Mayor every time, and we regrettably had to stop as he indicated to us that there would be no change made to the Ring Road plan as it was. Cameco repeatedly stated that they had public support for the Ring Road and that they had kept the public informed about its intentions.

The physical properties of the Ring Road make it considerably larger than usual, given the steep grade that exists naturally toward the waterfront. This requires a wide footing to allow for the construction of the road and this toe, as it's called by engineers, makes the visual impact of the road much more distracting and impractical.

Also, a planned relocation of Cameco's hydro corridor to follow the new road would place high power lines above it at a height possibly higher than 60 feet or 20 metres. Coupled with street lighting standards and steel guardrails for this elevated portion of the road which would face the beach, you have quite a visual impact as well as physical.

Vision in Motion was supposed to be an opportunity to improve the Port Hope waterfront. What started as a plan for a grand facelift of the entire facility and the waterfront, something that got the town very excited and councillors alike, has morphed into something that is very different from previously submitted designs like these.

Also, it should be noted that there were promises made about many more buildings to be removed as part of the demolition component than the current estimate. Original figures started at 30 buildings and now it's at around 10. A promised lab and visitor centre which figured in their animation that they had made available was cancelled, along with an estimated 50 to 60 related jobs that we had heard of.

Again, Cameco has continuously told us that they kept the public informed and that they had the public support. We didn't believe that and through discussion with many town residents and through our Facebook page that gathered much support, we realized that there was very little public knowledge of the Ring Road extension and that the fact that it was to be built on public land was very much unknown.

To get a clear idea of what attempts had been made by Cameco to communicate their plan to the

public, and as a result of the available CNSC hearing intervenor fund, we hired the services of a research firm, Campaign Research, to do a peer review of all past public opinion polls and related material. The analysis of those polls suggest that we were right. In its summary, it concluded with:

"Campaign Research finds nothing in the yearly opinion studies to suggest that the public is in any way supportive of the Ring Road extension of Choate Street, nor has their opinion ever been solicited in a quantifiable way on the subject."

We find that Cameco did not act in the town's best interest and used unethical means to influence past Town Councils and to force their will for a municipal Ring Road and expansion of their facility footprint without proper consultation with the stakeholders of this important tract of waterfront land, the people of Port Hope.

In our opinion, the best outcome for this situation would be for Cameco to build their new road within their existing fence line.

In closing, we cannot fully support a 10-year extension of Cameco's licence unless these three actions are taken first:

- firstly, that the CNSC orders Cameco to work jointly with the Municipality of Port Hope and special interest groups like ours to arrange for a public approval forum on the proposed Choate Street extension;

- secondly, that the CNSC orders an upgrade of Cameco's annual public polling process to one that has better ethical credentials; and

- lastly, that the CNSC orders a review of Cameco's Code of Conduct and Ethics document from the President and CEO regarding host communities. We have noted problems where the program is either broken, not being followed or its rules unenforced.

This concludes my talk.

THE PRESIDENT: Thank you.

Questions? Who wants to start?

Dr. McEwan...?

MEMBER MCEWAN: So I think I understand the geography. The West Beach is the beach to the right of the facility as you are looking down at it from the town; correct?

MR. BERGER: Yes.

MEMBER MCEWAN: So the road would flow over or along the edge?

MR. BERGER: I'm sorry I didn't put the slide on as I was talking, it would have helped to

visualize what I was talking about. I don't know if you have this anywhere.

MEMBER MCEWAN: We can see it, yes.

MR. BERGER: You have it there?

MEMBER MCEWAN: Yes.

MR. BERGER: I just noticed it. Power of concentration. So as you can see there, at the top on an angle is Marsh Street and what you see appearing from the left top corner is Choate Street. As it stands, Choate Street ends at Marsh Street. And if you take it right, you take it to -- that will lead you to the facility of Cameco and their office and main entrance. And if you go left, it will take you to the new water treatment plant and the beach access that exists presently.

So what you see just below Marsh Street and where Choate Street is, this is the old water treatment plant. This is land that was owned by the town. Somebody in their wisdom at the town considered that land as surplus and put it up for sale and Cameco bought it right away. This is something that we believe was a big mistake because it allows again Cameco to possibly increase their footprint without proper consultation with anybody from the town, and the previous Council seems to be going along with this very much.

Now, the Ring Road would be the beginning

of this junction of Marsh Street and Choate Street. It would go pretty much straight south toward the water and then around an 80-metre radius would turn to eventually meet -- at the end of this curve would meet the present south and west end of the parking lot. This would continue following that property line, on town land again, all of this on town land and on the beach, and then it would start curving a little bit southward where it will end in, I think it's a 40-metre radius ring portion.

We visited the location multiple times and we also took members of Council there. When you are at the Ring Road portion, the round portion, you are literally a stone's throw from the water's edge.

It is on an environmentally sensitive designated area of the Ganaraska Conservation Authority and if you walk there you find plants, probably two dozen species of plants that you have probably never seen before, and these are particular plants that grow near beaches and their purpose is to hold the sand together. So it's a very specific ecological system that exists there. You will also see mushrooms popping out of the sand in the same area, which is unusual but considered to be normal.

So that is what the Ring Road would be.

THE PRESIDENT: Okay. Before we get too into the detail, I would like some basic information. Does

Cameco own the property right now, the whole area where the beach and the Ring Road would be, and would it require environmental assessment to build a road and who would have to approve that? Cameco, can you sort of help me with this?

MR. CLARK: Yes, I can. Dale Clark for the record.

So there is quite a bit we would be happy to respond to in that intervention as needed.

To quickly answer your specific question, that is a municipal road. It is designed and intended and has legal agreements to be a municipal road, not a Cameco-owned Road. So to explain that, let me give some additional background and facts.

First of all, the Vision in Motion project, or initially Vision 2010 project, has been a very public process from the beginning. From gathering initial feedback in an initial engagement process, updates at community forums, town Council meetings, there has been extensive consultation and communication and updates.

As an example of that, I did some research to validate that as well. The Vision 2010 or Vision in Motion project has actually been presented in different public forums 87 times, or at least 87 times over the past 10 years. That includes in community forums, municipal

Council meetings, fall fair, other special meetings that we have held in Port Hope in the area. It has been discussed at municipal Council meetings 13 times in recent years, as far back as 2007.

So this particular aspect of the project, the Ring Road in question has been specifically mentioned or shown in pictures at least 12 times over recent years dating as far back as 2008. We have the specific dates and meetings and references for that, so for at least 10 years. In fact the drawings shared in the intervention actually show the concept of the Ring Road as early part of the concept.

So we understand that not everyone agrees with all aspects of the project and this is clearly one of those examples, but there is no question that we have developed this project to meet the priorities of the community. We have done that through a lot of consultation.

The clear interest and the strategic priorities of the community from very early days of this project were to primarily vacate the land at the Centre Pier, to return that to municipal or public use and to provide more public access around the harbour.

And that's what we have done and that's what our project does to meet those primary objectives that

have been established by the Municipality for many years, documented in the Consolidated Waterfront Master Plan and other forums. We have reached legal agreements with the Municipality to do that, to do just that. Part of that includes the construction of this road, the municipal construction of this municipal road in order to do that.

So to clarify one other point that was raised there, the net result of those changes meets that original intent. As an example, that actually returns 7 acres of waterfront land to municipal or public use. In other words, that is 20 percent less waterfront land that Cameco will occupy after Vision in Motion.

So it is done with and the project has been developed and communicated with that intent to meet those strategic objectives of returning the Centre Pier land for available use and making more public space available around the harbour. In order to do that, that has required some changes around on the other side of the property and has led to the design and the plans around this municipal road for many years.

So I would say again, we are proud of the project, we are proud of the consultation that has gone into this project and after many, many years of planning are ready to execute on this project.

It is unfortunate, as was described, we

essentially did reach an impasse. We tried to work very collaboratively with the West Beach group here and the intervenors. There is a basic point of disagreement and we weren't able to reconcile that.

There are -- there were and I believe there still are opportunities where we can collaborate or work together with the Municipality and meet some areas of interest. We are happy to do that, but there are legal agreements in place to follow through on this design that we have had for many years.

THE PRESIDENT: I find it strange that nowadays waterfront properties are really valuable and everybody rips up roads to get access to beachfront properties, so I'm very surprised by that kind of a thing. You still didn't answer what approval process you will have to go through.

I see Mayor Sanderson there. I don't know if that would be totally out of protocol to ask you to come and help us about this. Why is the Municipality interested in a Ring Road to a beautiful-looking beach? And whether CNSC has a mandate in all of this is a whole different issue which we will have to take into consideration.

MR. SMITH: Doug Smith, Chair of the West Beach Committee. I would just like to add something there. We did quote in our submission material

that Cameco in 2006 hired Gartner Lee to help them organize this public input to their Vision 2010 plan at the time and in their own report, and I quote the section 5.3, Table 1, the heaviest rated feedback that they got from the public was that they wanted a recreational beach and it was rated at like number 12.

There was also a much lower rated response from the public at a number five weight that they would like a road to go to the pier so that, you know, they could look at the lake.

This road here, you know, it's not one that you would want to park on because it's basically an industrial road now that's the new entrance to their facility and that wouldn't jive with the majority of the public input. You know, if the public said they want a recreational beach back there again like it used to be, you wouldn't want to build a road on it. So one would trump out the other one I guess you could call it today.

So, you know, they took that plan away, or all that input, and they basically had another consultant come in in mid-2006. They picked through what they wanted for Cameco and the document said specifically that they would pick out what was good for Cameco, not for the environment, not for the community.

So after all this, things got trucked out

and from that point on this Vision 2010 was their plan. There was no more public input. They did presentation after presentation after presentation, this is what we are going to do. They were not asking for any input and they wouldn't receive any input.

So this is 10 years already. It will be another couple of years, two, three, four years before the road gets built.

THE PRESIDENT: Okay, let's hear from Mayor Sanderson, please.

MAYOR SANDERSON: Mayor Bob Sanderson. Thank you for the opportunity for the political spotlight. I appreciate that very much.

The West Beach is a very important component of the Waterfront Master Plan to the community and, quite frankly, I think this Council, being relatively new, has inherited some legal agreements and some requirements relative to the Ring Road.

The West Beach group has been very active and I would remind the group as well that when we have the Centre Pier, the East Beach and the West Beach, we are going to require some fairly significant public input relative to best use. At this point in time, the West Beach is going to have to have a lot of remedial work.

The Ring Road without question does have

an impact and we have been out there with them. I have walked the land myself.

I have beside me Sue Bernardi, who is the team lead on the municipal part for PHAI and is our previous Clerk to the Municipality, so perhaps she could comment on some of the legal agreements in the past.

I would like to certainly comment that there are two elements here, which is the West Beach itself and the impact of the Ring Road. The Ring Road is certainly sponsored by Cameco and going to be paid for by Cameco, but in previous Councils it has been agreed that it's a municipal road.

So Sue, maybe I could ask you to comment.

MS BERNARDI: Thank you, Mr. Mayor, and thank you to the Commission for the opportunity.

Sue Bernardi, Municipal Project Team Lead for the Municipality of Port Hope. As was identified by the Mayor, I am their previous former Clerk for the Municipality and I was one of the negotiating parties with Cameco relevant to the various legal agreements that have been alluded to earlier this evening.

With respect to the Ring Road specifically, it was a problem-solving exercise, as I would best describe it, between Cameco and the Municipality in early days. Cameco came to us with a proposal on how

Vision in Motion in their proposed plan would work forward to redevelop the site and be able to enlarge their footprint and adjust their site plan for their facility as appropriate to get best use of their facilities and best use of the land, and through that proposal and discussions we as a Municipality identified that there were a number of constraints for us as a Municipality to protect our infrastructure and to deal with some of our municipal issues.

Specifically, they were in regard to stormwater management. For example, there are areas on Eldorado Place, which is the access point currently for Cameco facility, where there is considerable ponding and that remains an issue for the Municipality and we wanted to work collaboratively with a corporate partner such as Cameco to be able to resolve that issue.

Much of our infrastructure in terms of storms, sanitary and water also runs underneath Cameco facility and underneath the road infrastructure as underground plant through Marsh Road, et cetera. We saw it as an opportunity to be collaborative in terms of being able to partner on solutions conceptually to be able to resolve certainly our municipal infrastructure requirements going forward and to be able to facilitate where possible the opportunity for Cameco to be able to realize their

Vision in Motion.

Through those negotiations and opportunities, the Municipality understood that Eldorado Place was proposed by Vision in Motion to be able to look to the opportunity to extend their fence to include Eldorado Place and the Municipality looked at the opportunity as a road realignment, first to extend Choate Road South, to be known as affectionately called here, the Ring Road.

We need to maintain access as a Municipality to the southern portion of Cameco lands as it impacts the approach channelled to the harbour for dredging purposes, amongst other maintenance issues throughout the front of the waterfront.

Our Parks and Recreation Department, as well as our Works and Engineering Department depend on that access. So access -- maintenance of that access was important to us.

We also have a Council policy that speaks to maintaining access to the waterfront and we don't typically sell lands that have direct access to the waterfront unless there is a mutual community need that can be addressed, and in this case it was maintaining municipal infrastructure and access to the waterfront for municipal purposes as well as for the community and to address

previous Council's Waterfront Master Plan that had been identified.

I would address the idea of the Ring Road was conceptual in nature. We, through our negotiations, wanted to understand for the benefit of both parties, the Municipality and Cameco, what the Ring Road conceptually would look like and what potentially would be involved in the design.

The design elements we took from our typical urban standard for road design and we took that as an overlay, if you will, on an aerial to demonstrate whether or not our typical urban standard could conceptually be utilized in that area, understanding fully that there was going to have to be a full public consultation process that would have to be undertaken subsequently. That has yet to occur.

Council of the day engaged in these land transfer agreements with Cameco on the basis that -- and the agreement clearly sets out a structure on how that public consultation process and the tendering process would occur and we would have the opportunity at that time to engage the public in terms of the urban design and various aspects of access.

We envisioned that this was going to be an opportunity where the Municipality, a corporate citizen and

the community could come together in terms of being able to address several aspects of community planning and working through various issues for both Cameco and the Municipality in that vicinity.

THE PRESIDENT: So I'm still waiting for an answer as to who approves. Do you have to go through the Ministry of Environment to do an environmental assessment and what if it is sensitive land and you have to go to Plan B?

MS BERNARDI: My apologies. Yes, you are correct, Mr. Binder, with respect to -- Sue Bernardi for the record, by the way.

With respect to approvals, it would require an EA. From the Municipality's perspective, we would have to undertake that appropriate process, and as a Municipality, I understand it would be a Phase 2 EA that would be required. We would look to MOE's assistance in that regard, as we always do for any other project relevant to road reconstruction or road realignment or any new construction projects. As I understand the approvals process, as a Municipality, it would not be unlike any other road reconstruction and process that would have to be undertaken.

In the event that there is subsequent work through the EA process that would have to be undertaken, to

your point, we know that there are sensitive vegetation in that area. We have consulted with the GRCA, the Ganaraska Region Conservation Authority, in regard to those sensitive plant materials and we understand that some of those materials can be transplanted. They are indigenous. However, they are not a species that would be permanently eroded and not something that could be replanted.

So we are confident in those discussions that any future design that we would undertake where there is an encroachment on the beach area or any sensitive plant areas could be accommodated and that was on the basis that we as a Municipality and the Council of the day determined that it would be appropriate for us to engage in this agreement with Cameco and that these future consultations would have that opportunity in future.

THE PRESIDENT: So staff, does the CNSC have any role here or just kind of interested observers that we can maybe ask for updates as to how things evolve?

MS TADROS: Haidy Tadros for the record.

Currently what you are looking at and what we have just been discussing is outside of the footprint of any licensed activity that would be under the CNSC licence. So we, the CNSC, don't have any jurisdiction with what is happening in this area currently. And as mentioned, the legal agreement is in place and we are observers at this

point.

MR. WATSON: Shane Watson for the record. If I may add a couple of points of clarification and additional information to respond to some of the comments made by the intervenor and to supplement the comments that were provided by the Municipality.

We did work with the Municipality to develop the concept that's presented in the legal agreement and it was intended that that was a concept that would undergo further review and approval in a public forum. There are some specific things that were incorporated into the concept at the request of the Municipality and to be consistent with the strategic objectives that they have for planning at the waterfront.

So there were intentions to limit the cross-section of the road as much as possible and that the road would provide an opportunity to improve public access to the waterfront area. So it includes, for example, a multiuse trail linkage along the road with the intention that that would potentially be connected with other trails in the area as well as things like decorative street lighting and plantings.

The comment in the intervention about high-voltage power lines along the road, that is not incorporated into the concept and we have worked with our

power supplier Veridian. The high-voltage power lines that currently service the plant along Marsh Street and Eldorado Place will remain in their existing location and will not be relocated along the new road.

And again, part of the reason for the road is we are shifting our fence line along the harbour 10 metres to the west of the harbour turning basin, 10 metres to the south of the harbour turning basin and 15 -- 16 metres actually at the south end of the facility and making that additional space available there, which is part of the reason for the need for the realigned road.

THE PRESIDENT: So again, I am coming back to staff about this is a contaminated area and it will have to be eventually remediated sometime, if I understand correctly. So I don't think that we are entirely -- CNSC is entirely off the hook here in terms of overseeing that the work can be done. And I don't know if it's doing the environmental assessment together with the Ministry, the Ontario Ministry of Environment. I don't know how that will work out. Go ahead.

DR. DUCROS: It's Caroline Ducros.

The comprehensive study that was done under the *Canadian Environmental Assessment Act* that the Minister agreed upon in December 2012 had an alternative means assessment. The *Canadian Environmental Assessment*

Act 1992 included alternative means. That's where the Master plan that Cameco was speaking about was part of the assessment. So their options A, B and C were in that, and option D as well. So that's in the comp study and that was looked at.

But in terms of the option that was chosen, that was done through consultations and through Cameco's consultations and partly also I can get Ms Rupert to talk about the survey. The option that was taken was Option A and that was the option that we assessed fully.

So if they wanted to do additional work, additional remediation work and additional road, that would have to go through the process and we would have to assess that and make a determination of which type of EA would be required and by whom.

THE PRESIDENT: That's the hook for CNSC to oversee some of this stuff together with MOE.

DR. DUCROS: So if a project proposal gets submitted to us or a licence application gets submitted to us, we would do an assessment of whether or not we have a responsibility there, but it may also be a provincial responsibility if we are talking about roads. It's up to Cameco, the onus is on them to find out which permits, municipal, provincial and federal, that they are required to get in order to do any activity.

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

If I may, sir, it's again to reiterate the fact that there is the legal agreement and we are seeing a socio-political discussion that's taking place above and beyond sometimes the project.

As my colleague Dr. Ducros mentioned, there was the agreed upon plan, we did the assessment according to the plan that was proposed, and hence there is the "legal agreement" between the Municipality and I am not sure if CNL is involved in this, but at the same time where the road is going to go, and so on and so forth.

So we can probably assist the Municipality with respect to some kind of by-laws establishment as it relates to safety, we can assist with respect to potential elements arising, but as Dr. Ducros mentioned, if there are changes to that legal agreement then it's a whole different assessment that will take place. So we can assist the Municipality with respect to what by-laws they are going to put in place or what restrictions they're going to put in place.

THE PRESIDENT: But I guess all I'm saying is in addition to whatever legal arrangement, there is an environmental study that puts kind of a high-level vision as to how things will be done and if that's going to change

in the future, I think there will be a requirement to pursue it further. That's the way I understood what you are saying.

DR. DUCROS: So Caroline Ducros for the record.

I'm not sure that's what I was attempting to convey, but in terms of -- this sounds to me like an additional question of the scope of the environmental assessment. In that respect, we assess everything from Option A, not the Master Plan Option C which has these additional elements. Everything that's being proposed in this licence application has been assessed in the comprehensive study and subsequently in the environmental assessment under the *Nuclear Safety Control Act* report that is appended to the CMD.

What is being proposed is not as big as what was assessed, but the activities that were assessed -- pardon me. What has been proposed in the licence application, everything there has been assessed and other activities that aren't being carried out now have been proposed in the preliminary decommissioning plan. These additional pieces that you're talking about, the Ring Road, the beach and everything, that wasn't assessed in the environmental assessment under the *Canadian Environmental Assessment Act* because we only assessed Option A. That was

part of the alternative means assessment which is in the EA and was reduced based on public participation by both Cameco and CNSC.

MR. WATSON: Shane Watson for the record.

If I may, respectfully, a point of clarification on Option A that was assessed in the EA. The road that we are referring to here today as the Ring Road was a feature presented on the Option A plan. The concept for Option A is depicted in the presentation that was presented by the intervenor, an early concept which shows the Ring Road. Of the four options that are presented shown in the intervention here, three of them I believe had some sort of Ring Road included in them.

MEMBER MCEWAN: I need this question answered to understand.

THE PRESIDENT: Go ahead.

MEMBER MCEWAN: So this Ring Road becomes the new main entrance and exit into the Cameco site?

MR. WATSON: Shane Watson for the record.

So yes, it is a municipal road. It will be constructed on municipal property, paid for by Cameco. The details of that are laid out in the legal agreement which is publicly available from the municipal website. It will serve as the new access road to the waterfront, both for the public, for employees who come to the conversion

facility as well as trucks which are arriving at the conversion facility.

MEMBER MCEWAN: So this will become the main exit route for the products of the Vision in Motion project?

MR. WATSON: Shane Watson for the record.

For the Vision in Motion project, yes, all trucks coming into the facility will use this road to access the site. For logistical reasons, there is another gate at the north end of the facility which we would be looking at using for vehicles that are leaving the site. So particularly for the Vision in Motion project there may not be substantial traffic exiting the facility and using this road.

THE PRESIDENT: Go ahead.

MR. BERGER: For the record, Denis Berger.

There are a few things that we are going to have to address here, but first, I think the most important one is what three speakers ago mentioned, the issue of politics. Believe me, if we could avoid talking about politics here we would, but we feel that the actions that led to the reason we have to make a presentation today were directly related to Cameco's own poll, which they use their result to indicate a cooperation from the Council and supposedly an agreement by the public who supposedly were

informed and kept informed about this.

If you can put the PowerPoint picture here, I'm going to show you, this is -- it's not the final draft, but based on the dimension and the orientation, and the physical restriction to build this road, we believe that it is pretty much where its final positioning would be.

During some of the public information events that Cameco held, one of them was at the yearly -- annual fair, farm fair, agricultural Port Hope fair that we have, very popular, where Cameco has a chance to interact with people who might not have a clue what's going by their facility.

We got this picture here, which was -- with a little note from Doug Prendergast, who used to be their PR. He's not with the company anymore. This was specifically addressed as the artwork that they were using with the public.

Now when you look at this, and you show this to people, you can't have a clear view of what this means. This is a flat drawing, out of scale. You cannot deduct anything from this, except that the person who did it was not very good.

Therefore, if they have used this drawing, and they had talked a little bit about the physicality of

it, they might have had a different result in their annual poll, and the various polls that they did. This is why hired we the service of Campaign Research to really look at the data of what really took place.

We heard earlier a member of Cameco explicitly say how many times they had mentioned this information. But you have to also look at how the information and what information was conveyed to the public. It's very misleading when you look at this kind of drawing, or these ones.

These ones were commissioned by SNC-Lavalin early on in the Vision 2010 project, which had to be changed for Vision in Motion. And we like to joke that motion part is about the date moving constantly. To be fair, the PHAI project is way behind, and this is affecting all matters related to the revitalization of the waterfront, including Cameco's own plan for their remediation on their property.

When you look at these drawings here, it's interesting. As a matter of fact, you might not see it very clearly, but SNC-Lavalin -- nobody ever noticed this, I have noticed it, and people have said, "I never saw that." The two top drawings have a bridge going across the approach channel for the marina. Now this marine is used exclusively for sailboats. I don't know how SNC-Lavalin's

designer and engineer were addressed for the project that they were paid for, but, you know, to put a bridge over an approach channel for a sailboat would have to one hell of a high bridge. That would likely be a trail -- like a bridge for the trail that would follow the waterfront. This doesn't make any sense whatsoever.

Another interesting detail on here is if you look on the pier -- which, by the way, was not owned by Cameco. So when Cameco claims that they're giving back 20 percent of land, of green land, they never owned Centre Pier. They stored their material there. And now they have to vacate, including removing some of the buildings, because it's part of the agreement. But they have to. This is not a voluntary action on their part.

But you see on all four drawings this building, that was always to be demolished during the cleanup of the Centre Pier, remains on there, and they even planted trees around it, but maintaining an access in front of it. I don't know why it is. I asked questions and I never found out. You could say it's just a detail. But they were commissioned to do these drawings.

So I wouldn't put too much importance in the validity of these drawings because they're flawed in many ways. They look good, and anybody who looked at them 10 years ago would have thought, This town's going to look

really good by the time it's finished.

Now the final draft of the --

THE PRESIDENT: We're not going to resolve it here --

MR. BERGER: I'm sorry.

THE PRESIDENT: -- so I don't want to go into this detail, because we can't really get into this here. This is not the place to do that.

So the question is: what can be done moving forward? And I guess the first thing that I would like to suggest is all the parties get together and thrash it out, including what's required to be done with the approval processes, and when.

I don't know when the road is being planned for. Is it before Vision in Motion starts? ASAP? Next year? What was the time horizon for this?

MR. WATSON: Shane Watson, for the record.

In respect to the timeline for construction of the road, there are some activities that need to take place before the road can be built. In particular, remediation of the property upon which it's going to be constructed will be undertaken by CNL, through the Port Hope Area Initiative and the Port Hope project.

As well, the terms of the purchase and sale agreement for Cameco to acquire the Waterworks

property need to be concluded, which includes demolition of the structures on that property.

Just to clarify, the ownership of the former Waterworks property, it's currently owned by the municipality. There is a purchase and sale agreement between Cameco and the municipality for us to acquire it once those conditions are completed.

With the Port Hope Area Initiative starting their work in 2018, it won't be until some time after 2018 that there will be the ability to begin construction of that road.

THE PRESIDENT: Our interest here in CNSC is if there is any contamination, legacy contamination, in this particular area: on the West Beach, on the road. Then we would like to know what's going to happen, where there's -- how it's going to be cleaned up and where it's going.

What I would like to do, we have some time here, so I just strongly recommend it's not a licenseable item for the CNSC, but we can be a pest and ask you every time we do a review of -- the regulatory review, we can ask for an update as to how things have progressed, and maybe hope that you can come up to some sort of workable solution.

MR. SMITH: Thank you, Mr. Binder. Doug

Smith.

I guess why we've come to you, really, is because of a number of things, in that Cameco were the driving force for this road. They're paying for it, they wanted it, you know, they're the driving force behind it. You know, be that, you know, we feel they have no public support for it, they never got proper public support for it, they've gone -- you know, they're trying to include their vision -- it's an integral part of their Vision in Motion plan, which they're submitting to the CNSC for this 10-year period.

So, you know, we don't know where to remove that road from their Vision in Motion plan until things get sorted out between the municipality and Cameco. We would be grateful for that. I don't know if Cameco would be willing to do that.

THE PRESIDENT: Well, we also heard from Mayor Sanderson, who is quite able and eager to make sure that things go right. He heard the argument, and he has a council, and he's the legal kind of government-level. Since he owns the road, or the eventual road, it's going go be up to them to decide what to do with this, and how to do it.

So I think we cannot proceed any further --

HON. SANDERSON: Sir, sorry, I'd just like to make a comment as well.

The CNSC, I think, does have some oversight here, because that area needs to be reassessed relative to the PHAI, and we'll have some requirement for remediation aspect to that regardless. That also goes for a fair bit of the West Beach independent of that.

The other thing I'd like to reiterate -- and I do agree with the West Beach group -- is that we will require and request a high level of public involvement as we move forward on this, because the entire waterfront master plan -- those were conceptual drawings you saw, some of which, when you put bridges over rivers and skyscrapers by the lake, perhaps we didn't actually buy into that plan as strongly as the group that put it together would have liked us to.

It's sort of sitting on the back burner for now, until we have a better assessment of the remediation needed of the entire West Beach, until we have such public input as to what is the use for the West Beach, in conjunction with the Centre Pier and the East Beach.

So I think we have a fair bit of work to do. I think the element -- you know, the urgency somewhat is relative to the ring road itself, right, and I think there is some work to be done both from the public

perspective, discussions with, you know, Cameco, which we've had, and with the West Beach group, but also to involve the public at a broader basis, and certainly from our council's perspective, to dig into where are we really, as this council? Although other previous councils have legal agreements sitting in place, we've not had a chance to really review those from that perspective.

So I agree with you that we have a lot of work to do to make sure that the end result is appropriate for all parties, but I also would say that the CNSC will be having a role relative to the remediation, not under Cameco so much, because of the PHAI.

Thank you.

THE PRESIDENT: Okay. Thank you.

Any further comment?

So any final, final words?

MS MURTHY: Sorry, Dr. Binder, may I...?

THE PRESIDENT: Yeah, go ahead.

MS MURTHY: Kavita Murthy, for the record.

I do agree with what Mayor Sanderson has said. The CNSC has a very active presence in this area, as CNL and Cameco and the municipality itself also knows. We also hold joint regulatory group meetings which involve MOECC, Environment and Climate Change Canada, and we do have regular discussions. So it is not as though we are

not there and not plugged in to what is going on.

I'll pass this to John Thelen for further comments.

MR. THELEN: John Thelen, for the record.

Just to mirror that, when it comes to Port Hope Area Initiative, which we'll hear about tomorrow, there are joint regulatory groups for that licence as well, with the same players, as well as we'll discuss tomorrow. Any of the areas outside of the footprint of Cameco's licence sites are and will continue to undergo radiological surveys and cleanup to ensure that any legacy waste in the town is remediated as per the Port Hope Area Initiative licences.

THE PRESIDENT: So West Beach will be included in all of this?

MR. THELEN: Yes. Any area in town, including West Beach, where there is remediation required will undergo Port Hope Area Initiative --

THE PRESIDENT: Okay.

MR. THELEN: -- will undergo that program.

THE PRESIDENT: Thank you.

MR. CLARK: May I provide an additional comment, please?

I recognize that, you know, a portion of that is a little outside of the operational licence, and

we're maybe ready to move on, but there is a personal comment, there's comments in the intervention about ethics, and I would also like to respond to that on the record as well.

First of all, maybe quickly to respond, certainly we agree and will continue to work closely with the municipality. If there's a public approval process, whatever that process is and requires to go through for that municipal road, we'll work closely with them on that.

A quick reference on the polling, and to clarify, the community polling that we do is not intended to poll or ask for information on very specific aspects of a project. It is intended to get general feedback and information on levels of support. I do have information from that, and can respond at a later time to the question from yesterday as well about gender gaps, and information on that, as well.

But specifically, and on the record, I would like to address the comments on ethics that were raised in this intervention, because it's personal. I was personally very surprised, and frankly very disappointed, in these comments. They are not at all consistent with the culture that I see, with the behaviours that I see from our employees at work or in the many different community events that we are involved in. Frankly, I think there's no

better example of that than the employees that we've had speak here yesterday and today.

I can speak to or address the particular scenarios or examples that were given, but, again, I think the quality and the standards and the ethics of our employees were best exemplified by the quality of those interventions that were not solicited, not coached. That's an example of the employees that we have and the behaviours that we have in our every day and in public events.

There was a specific example referred for myself, essentially responding to a question at the 2014 community forum, I believe it was, by dismissing a question and saying, "Next question." In fact, we have that forum, as we do many of our forums, in recent years at least, on video, and that is not true. In fact, I've read the transcript from that, and, again, it is simply not true.

In that particular forum, there were two questions -- from the transcript two questions asked about the West Beach, about the ring road, about community support. We can provide video to support that. Both were answered at length, approximately one minute of an answer for both of those questions, after the second question, at which time the moderator -- the moderator said, "Next question."

That's after almost two full minutes of a

response to those questions, which is on video, at the community forum.

I can respond to the other particular questions or accusations, but that's an aspect of this that I felt and wanted to respond to, because I take that very seriously, Cameco takes that very seriously. I'm extremely proud of our employees, of the way we've developed this project, and gotten to the point where we are today, of our operations and of the way that we -- myself and our staff -- conduct ourselves in these different public forums.

Again, I think that's best exemplified by the interventions that we've seen yesterday and today.

THE PRESIDENT: Thank you.

Okay, are we about to close this particular item? Anything else you want to add?

Very quickly, please.

MR. BERGER: Yeah, I'll do my best.

Well, we've been told many, many things by Cameco, and believe me we've tried. We've tried. When we hear from the vice-president that they are collaborating and they're willing to work with us and such, our experience has not demonstrated that.

We tried to get a final draft of their overall design. They would not let us have one. What

we're left with is the pre-draft, which are going to be very different. So we don't know what it's going to look like. That's not co-operation.

Also, we believe that, as a corporate citizen, Cameco has not been acting in the best way that it should. Their intent to work with us in other areas has not been demonstrated. We asked them why they purchased the buildings in the northern portion Choate Street, across the street, which is the old Oliver excavation land, which is what you would see when you arrive at the top and you would be looking for the water shortly.

Those buildings are in the way. They were sold. One building was taken down, and the town rezoned these buildings from commercial to industrial. We asked them: what do you plan on doing with that? Because, you know, it's a valid concern that all of a sudden Cameco could be jumping across the street. So we see it here with the old Waterworks plan, the land that technically they don't need because there's no visitor centre and there's not laboratory that we promised.

So we see Cameco, in its behaviour, moving outside of their established line without proper public consultation, and we haven't had any answer and we haven't had any collaboration, so I disagree with those statements.

This is why we're here today, because

we've tried everything. Unless we can cancel this agreement, this is going to be a fait accompli. We're not going to be able to cancel it and we'll just have to accept what's happening.

THE PRESIDENT: Okay. Thank you. Thank you for this presentation.

I'd like to move on.

--- Pause

THE PRESIDENT: The next submission is an oral presentation by the Capitol Theatre Heritage Foundation, as outlined in CMD 16-H8.21.

I understand that Mr. Joynt will make the presentation.

Over to you, sir.

CMD 16-H8.21

**Oral presentation by the
Capitol Theatre Heritage Foundation**

MR. JOYNT: Thank you.

My name is John Joynt. I am vice-president of the Capitol Theatre Heritage Foundation, the organization responsible for the operation of the Capitol Theatre located here in Port Hope.

I am speaking to you on behalf of the

board in support of Cameco Corporation's licence renewal application from the perspective of Cameco as a good corporate citizen of the community.

The Capitol Theatre is a year-round performing arts venue. We present over 300 performances annually in the two theatres within the theatre, from Broadway musicals that we direct and produce, to our own original works, to country and western music, children's shows, using local actors, movies and pantomimes.

Other community groups such as the Northumberland Players and Friends of Music rent the Capitol for their professional performances, and as well our space is rented for private functions and corporate meetings and events.

We plan our programming to cater to all interests and ages. Our budget is just over \$1 million dollars, of which approximately 70 percent comes from ticket sales. The remaining \$300,000, we must raise each year from tickets for fundraising activities to ensure we break even.

So you can see that the theatre business is unique. You know before you open your doors that revenue from your product, that is ticket sales, will not cover your costs. Virtually no theatre in Canada or anywhere else has ticket revenues that cover all their

expenses. So as an aside, I have some advice for the committee. If you're ever considering going into a business, do not go into the theatre business. The only way to make \$1 million dollars in the theatre business is to start with two million.

--- Laughter / Rires

MR. JOYNT: Over 50,000 people come through our doors annually. We have over 125 volunteers, who sell tickets, usher attendees to their seats, tend the bar, et cetera. Without these unpaid people, we would close. We estimate we drive over \$2 million in economic activity for Port Hope and the surrounding area.

As an aside, after a long day and long two days, if you'd like some good entertainment tonight there's a live performance called Take the A-Train, which is a story of music and people in New York City in the 1800s, produced by Albert Shultz, of Sole Pepper, in Toronto, with whom we have a relationship, and the prices are a third of what you'd spend in Ottawa or in Toronto.

The theatre, build in 1928, was one of the first theatres in Canada to be constructed for talking movies. It is called an atmospheric theatre, in that the interior is decorated to resemble a court yard of a European castle, and is only one of a few such theatres remaining in Canada, and, to our knowledge, the only one

that has been fully restored to its original state. Because of this, the theatre was recently given an historic site designation by the federal government.

While the theatre is successful today, it has not always been. In 1987, it fell on hard times and closed. But thanks to the foresight of a few Port Hope citizens, it was saved, restored and reopened in 1995.

But saving the Capitol was not easy. A mortgage on the property was required to pay the cost of restoration, needed enhancements and changes to transform it from a movie house to a performing arts centre. In 2007, it again came close to closing, but thanks to the generosity of the community, over \$1 million dollars was raised to pay off the mortgage and provide a sound financial base for the future.

This is where Cameco comes in. Cameco made the largest donation to the million dollars, and in return was given the naming rights to the theatre, which is now known as the Cameco Capitol Arts Centre. Cameco renewed these rights for a second time in 2013. As well, for the past several years Cameco has been the largest corporate sponsor of our summer Port Hope Festival Theatre productions.

For these reasons, we, the Capitol Theatre Heritage Foundation, strongly support the renewal of Cameco

Corporation's licence. Cameco is an outstanding corporate citizen.

Thank you.

THE PRESIDENT: Thank you.

Any comments?

Go ahead.

MEMBER MCEWAN: Did the theatre require significant remediation for contamination, as you regenerated it in the eighties and nineties?

MR. JOYNT: That was before my time. I don't know. I don't know.

THE PRESIDENT: Neither do I. Anybody knows?

MS MURTHY: Kavita Murthy, for the record. We can only hazard a guess. Because of the era in which it was built, it probably predates the activities.

THE PRESIDENT: Comment?

So just full disclosure, we really were planning to come and see tonight a thing, but I'm not sure we're going to make it anymore.

--- Laughter / Rires

THE PRESIDENT: Maybe tomorrow.

Okay, thank you for your presentation.

MR. JOYNT: Thank you.

THE PRESIDENT: We're going to take a 10-minute break, and then we'll go through our final rounds.

--- Upon recessing at 5:49 p.m. /

Suspension à 17 h 49

--- Upon resuming at 5:59 p.m. /

Reprise à 17 h 59

THE PRESIDENT: Okay, we are going to continue with a question period. And starting with M. Tolgyesi. Pas de question?

MEMBER TOLGYESI: *Non.*

THE PRESIDENT: *Je crois pas.*

--- Laughter / Rires

MEMBER TOLGYESI: Don't ask me, you ask for it.

THE PRESIDENT: Okay. Dr. McEwan.

MEMBER MCEWAN: So if I can go to staff CMD page 16. So actually let me say page 15 and 16, because it's the same thematic question.

You've made two very broad statements on page 16 in the second paragraph of the Change Management section. "Cameco has taken appropriate corrective measures to adequately implement improvements." In the Safety

Culture, second paragraph on page 15, you've said again a very broad statement. "Thematic areas for improvement," and focus areas for implementation.

That's really not a very helpful statement without a little bit of detail or some examples or some descriptors that give us some sense of what is being done and what the problems were. So can you help us a little with that, please.

MS MURTHY: Kavita Murthy for the record.

The safety culture assessment is a new element that has been introduced in the CSA standard in 286-12. And as a part of the work they did before submitting the application, they did do a safety culture assessment, which was reviewed by staff. So I will ask Chantal Gélinas, management system specialist, to respond to the question.

MR. BOUCHARD: André Bouchard, director, Human and Organizational Performance Division.

Yes, we did have a review of the self-assessment summary. And from that review, we have identified some areas a bit where the self-assessment -- and we could discuss more with the licensee with regards to understanding the self-assessment and the actions that were identified from the licensee standpoint, and the nature and the linkage between these actions and the surveys and

areas.

So in the next licensing period, we will do actually a future visit to the licensee to have that discussion and also in line with the upcoming regulatory document on safety culture.

MS MURTHY: Kavita Murthy for the record.

If I can add to that, Ben Prieur, who is the senior project officer and inspector for the site, would like to add some detail about the change control program.

MR. PRIEUR: Benjamin Prieur for the record.

With respect to CNSC feedback on -- in our CMD on page 16 with respect to change management, this statement here reflects CNSC staff's review of Cameco's process or change in design control program document. During the licensing period, CNSC staff reviewed that program document and ultimately accepted it; therefore, this statement here in our CMD is to reflect the positive changes in that program document.

MR. INGALLS: Dave Ingalls for the record.

I can provide a bit more context around our safety culture assessment, if you wish. The safety culture assessment we do every five years, and in fact all Cameco facilities we do a safety culture assessment every

five years. We have an outside consultant who's an expert in safety culture come on site and perform it.

And it forms two components. First they do a survey of employees. And really it's a perception survey of saying -- of judging employees' perception of how they feel safety should be compared to the reality that they experience in the workplace. So the first part is a survey that employees are asked to do.

And then a team of interviewees, and it's led by an outside consultant, but we actually bring in employees from other sites to help conduct the site interviews. So based on the feedback from the survey that's provided, they then do a week of interviews with employees that usually represents about a quarter of our workforce that gets interviewed through the interviews to help gain deeper insight into whatever the findings were in the paper survey.

And some of the strengths that were identified there from that assessment was that the overall conclusion was that the safety culture was improving at our facility. Some of the highlights were employees were comfortable raising safety concerns, supervisors are available, and that management holds safety as a priority.

It did identify obviously areas to work on. There's always improvement opportunities we can make

in safety culture to improve and enhance our safety culture. And a few of the areas identified were deviations from standards, rules, and procedures, so ensuring that we always are following the same standards at all times. Dealing with people, so there was a perception within the workforce that perhaps we weren't dealing aggressively enough, I guess would probably be the best way of saying it, with some unsatisfactory safety performance from some other employees. And the other aspect was kind of a focus on conventional safety or the employees' perception of a focus on conventional safety versus a focus on human performance.

And some of that -- the consultant that we brought in also -- it was a bit of a language thing. We don't use the word "human performance" commonly in our work place, we use -- we call them "operating fundamentals." They were touched on by some of the employees that came here with the communication, the verification, and the responsibility. Really those are focused around human performance activity.

So some of the actions that we've taken there, we're currently investigating what we call safety absolutes. So those are somewhat common in industry where there are safety rules that there are -- it's very clear that there's basically severe consequences if you violate

safety rules. Normally they're around some of the key safety protocols such as lock-out, tag-out, or working at heights, that type of thing.

We are in the process of rolling out another new human performance too, called self-check, which is again common in the nuclear industry. It's kind of the questioning attitude before you do a job, to make sure you understand the risks ahead of time.

And the last one is we have an ongoing procedural improvement plan at our site that takes in human factors. So we've been over a period of years working on improving our procedures. We actually developed a new procedure development procedure, basically -- a procedure for procedures, if you follow what I'm saying. But it includes human factors. We actually included professionals in that from industry and also university professors to help develop that standard for our facility. And one of the actions from that was to accelerate the process of upgrading all of our procedures to impact those, that new criteria.

MR. PRIEUR: Excuse me if I can add a little bit more context to the changes to Cameco's process and design change control program that was reviewed by CNSC staff.

So in the last version that was reviewed

by staff, Cameco had made improvements with respect to better linkages to other site programs in their document, updating titles and responsibilities based on organizational changes at the plant or at the facility, also correcting minor wording and formatting inconsistencies, and also as a result of feedback that was raised during an inspection with respect to the need to add more clarity on how this particular procedure is linked with the training change management process at the conversion facility; therefore adequate changes had been made to the program document, and therefore Cameco had satisfied the expectation to address that action notice from that inspection.

THE PRESIDENT: Thank you. Ms Velshi.

MEMBER VELSHI: Thank you, Mr. President.

I'd like to start off by making a comment, and it's to commend Cameco. I was particularly impressed with the participation of your employees. At none of the hearings have I seen such a level of engagement, professionalism, commitment. And it seems it was all, you know, done voluntarily without coaching. And it was very striking. So as you said, you must be really, really proud of them.

And the second one was your rather muted outrage at the allegation of a lack of ethical behaviour or

code of standards or code of conduct. And I'm really glad that you got that on the public record. Again, a testimony of how strongly you hold that. And so again, my compliments to you.

I have some final questions for staff. And if we turn to page 26 of your written CMD. It was more to get a clarification. So it was around the inspections done and how you categorize any findings from that.

So if I look at the top of the page on Fire Hazard Analysis, you "conducted a focussed" -- there's a typo there -- "inspection of emergency management." Second paragraph: "While some deficiencies were noted, . . . staff did not find evidence of unsafe operations that would result in any immediate risk."

And I think we've heard somewhere, well, what does immediate risk mean? Could there be longer-term risk? But so there was that, that no evidence of unsafe operations.

Further down under Criticality Safety, it says "All findings were minor in nature." Further down somewhere else it said there were no findings.

Is there a grading of findings so that I can interpret what you're saying? This is not serious; this, hey, you know, it's just your way of saying, Watch out; this is a problematic area. Or does it just depend on

the inspector who has done it on what choice of words they use?

MS MURTHY: Kavita Murthy for the record.

No, it does not depend on the inspector and the choice of words they use. Any time an inspection finding is such that it presents an immediate or imminent risk to persons or the environment, an inspector has the power to issue an order and stop that act of it immediately from continuing.

When we state that there is no immediate risk, the inspector generally issues a written notice. It is still a non-compliance. A written notice could be an action notice or a directive, and it requires that the licensee take corrective actions within the stipulated period of time.

So with respect to the fire inspections, if you would like to know what were the deficiencies or were you just interested in knowing --

MEMBER VELSHI: Yeah, I was just interested in the categorization, because I've seen no findings, minor in nature, low risk significance, you know, no immediate risk. And I just wondered what the categories were.

MS MURTHY: Sorry, go ahead. Okay, go ahead.

MS TADROS: Haidy Tadros for the record.

Ms Velshi, if I can draw your attention to one of our appendices, it's a risk ranking appendix, and I think in a broad sense maybe part of what you were searching for may be found in how this table comes together with regards to how risk is identified, and consequently, our reaction to finding through inspections and how things are categorized. So this does take a look at the significant impact that potentially --

MEMBER VELSHI: So I can't get easy access to the appendix. But does it say how you would choose the language that you use in describing your findings? I don't know if I'm conveying to you what I'm trying to ask.

Once an inspection is done, is there almost a categorization; this was a level 1, 2, 3, 4, or 5 finding; 1 is nothing, there was no finding, right. Number 2 is, well, there were, but it was minor, no further action, really. Something for you to keep in mind. I mean, do you do 1, 2 -- is it like that? So that when I see something that says "low risk significance," I know that that's still higher than "minor in nature," for instance.

MS TADROS: Haidy Tadros for the record.

I understand your question. And with regards to your articulation of almost a one page, you're

articulating how these come together, no, we don't have that kind of articulation of what the definitions are exactly.

But we do look at -- within each safety and control area, as you know, there are very specific criteria that we have to search for. They are regulatory requirements. And given the nature of the programs and how those programs are implemented, it is up to our specialists and our inspectors who are conducting these inspections using inspection criteria and inspection guides. When they go through the facilities and they go through their checklists, if you will, to look at what these findings signify, that is when they categorize them as no finding, obviously, no non-compliance. Low risk would convey, as Ms. Murthy has identified, a level of non-compliance but of low risk to health safety impact to the environment.

MR. THELEN: John Thelen for the record.

If I could add to that as well during our original presentation I talked about inspections and how I'm an inspector for the CNSC. And when we conduct inspections, before we leave the on-site portion of the inspection, we leave a document called Preliminary Summary of Facts and Findings. Should there be a risk-significant finding, it would be clearly documented there.

I have gone on inspections in the past at

non-Cameco sites where I have had a risk-significant finding where it was clearly articulated where the licensee had to do immediate action to remedy that situation. Otherwise the information and the risk significance or an enforcement action that could come from a finding would be contained in the final inspection report, and that could come several weeks after the on-site portion of the inspection.

THE PRESIDENT: Thank you. M. Tolgyesi? Still not? Okay. Dr. McEwan?

MEMBER MCEWAN: There's a picture of the Dorset Street site. Are those drums in the bottom -- pardon?

THE PRESIDENT: Which, pardon me, is it --

MEMBER MCEWAN: Slide 9, I'm sorry, slide 9. I can't read my writing. It's the map.

THE PRESIDENT: Yeah.

MEMBER MCEWAN: So are those drums in the sort of middle of the picture on the left the drums that we talked about yesterday with the -- by the fence. Okay, thank you. And again if I go to slide 10 -- no, I certainly got that one wrong. I really can't read my writing.

So there are a number of graphs that

you've given us showing release levels and the performance of Cameco. There were no action levels on them. It would be really, really helpful to understand for each of those graphs where the action level was as well as the release level. And that I think would give us some sense of the structure. And again, it wasn't -- I think it was on one of the graphs in the CMD.

MS MURTHY: Thank you for that suggestion. We will certainly take that and make the changes next time.

THE PRESIDENT: I will go further. And again, it's not kind of mandatory, but if you know there's administrative level, why wouldn't you put them too on the graph so everybody really understands. Your staff is mentioning continuously "defence in depth," so why not if they're available? You don't want to? You don't like that?

MR. INGALLS: Dave Ingalls for the record. The one -- I agree with the action levels, and we generally do present that in our quarterly and annual compliance reports. We do present our results in relation to the action level and the licence limit.

In some instances we do show the administration level, though from a CNSC perspective, that level is not a regulated level, so to speak. They are internal administration levels within Cameco.

THE PRESIDENT: I know. But the action limit is also not a regulatory limit, but it demonstrates how the defence in depth is going. So you put yourself at another administrative level that you try to make sure that you don't exceed your action level. So if it's an acceptable practice, tell me what's the down side for showing it?

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

I think the action levels are, as Mr. Ingalls referenced, part of the CNSC's regulatory framework and there's guidance documents through the CSA standard on developing -- soon to be published standard on developing action levels.

Administration levels are a little bit of a different story and I take your point on it visibly demonstrates performance at the facility against something, but they're set with a much different audience in mind. And so we'd have to look at how they're set across the organization or across facilities before I think we'd feel comfortable with them being included as part of the public documents.

THE PRESIDENT: My last pitch on that is I understand what you're saying. You don't want people to see that you can exceed your administrative licence, and

people will look at it as some non-compliance of some sort.

But the other side of the coin is you get action levels, and then your actuals are so much less that it always begs the question why are the action levels so high.

MR. MOONEY: Anyhow, I'm feeling a little punchy because I sat here for most of the day.

--- Laughter / Rires

MR. MOONEY: But I would say that what we're worried about with those admin levels and making them part of the discourse is that the reaction to getting close to an action level internally is really quite severe because while you're all very nice people, no one wants to be in front of you to talk about those things. So if we start to make it the admin levels we're talking about now as being part of updates and those sorts of things, it becomes again -- we just have to be aware of the behaviour that that might engender.

MS MURTHY: So with respect to action levels, we certainly can put those because those are defined in the Licence Condition Handbook. And also another point about action levels, an effective action level is not so far above your operating limits, your operational release levels that you would never trigger it. You need to be close enough that you will be able to pick

up any anomalies in your system.

MEMBER MCEWAN: So one more very little -- well, maybe not a little question. Page 30 of the CNSC CMD. "CNSC . . . confirmed during their compliance inspections that maintenance is performance."

Do you have a maintenance backlog?

MR. INGALLS: Dave Ingalls for the record.

We do maintain a maintenance backlog. And when you benchmark effective maintenance programs, effective maintenance programs actually do have to maintain a backlog just so that you can plan, schedule, and plan and schedule the work accordingly. So yes, it's not that we have no backlog. We do have a backlog.

Our amount of emergency work orders is something that we track as part of our operation reliability KPIs. And our goal is obviously to have all of our work planned and to have very few unplanned maintenance events, and that's the real strategy of our reliability initiative.

MEMBER MCEWAN: I guess the key question is the backlog isn't growing because you don't have time to do the routine maintenance?

MR. INGALLS: Dave Ingalls, for the record.

No, we maintain a steady amount of backlog

within our process.

THE PRESIDENT: Ms Velshi.

MEMBER VELSHI: Staff, your CMD page 32, the last paragraph, the second line has some words missing, the one that starts with, "the maximum individ..." So you may have sent an update, but I... Okay, so I'll fill that in.

Question for you, Cameco, around your dosimetry program for internal uptakes. How frequently do your employees submit urine samples and how often is lung counting done?

MR. INGALLS: Dave Ingalls, for the record.

We do have an internal dosimetry licence that outlines our programs for the dosimetry of our employees. For the internal dose, it varies by work group. But if I take, for example, the work group most exposed, for instance the chemical operators or the maintenance department, they would get lung counted twice a year through the lung counter.

In terms of the urinalysis program, they have to submit a urine sample if they've been off site for more than 24 hours. So it's basically every time they change their shift cycle, so it's at least once a week, depending on what shift cycle they're running. For some

employees, that could be two or three samples per week, depending on how their shift schedule actually works.

MEMBER VELSHI: I'm sorry, did you say if they've been away from the workplace for more than whatever it was they have to submit a sample?

MR. INGALLS: Dave Ingalls, for the record.

That's correct. So for production employees, if you're off for 24 hours, it's described in the licensing basis for our dosimetry program, that makes it a result that can be used for a dosimetry calculation. So if they've been off for that period of time, they submit a urine sample.

MEMBER VELSHI: It's kind of different from the kind of program that I'm used to. It's normally after an exposure that you'd submit. So is this to check that they haven't received something while they've been away?

MR. INGALLS: Dave Ingalls, for the record.

No, it is looking for their occupational exposures. We do have a number of different types of compounds at the facility. Our lung counting program is designed to address the slow-moving type compounds. The urinalysis program is designed to catch the faster moving

compounds. The reason we test so frequently is it allows us to capture if an employee has had an uptake from a fast or medium-moving uranium compound, and allows us to do that investigation in real time.

MEMBER VELSHI: Maybe I'll ask staff to explain that. Isn't it usually after the exposure that you submit a sample?

MR. THELEN: John Thelen, for the record. Before we do pass that back, if I could correct the record on the point you brought up previously. On page 32 of CNSC staff's CMD 16-H8, I just wanted to make it clear the two sentences you were mentioning talk about Figure 5. So the sentence before indicates:

"Figure 5 presents the annual maximum and average individual effective doses of all NEWS monitored at the PHCF..."

-- over the current licence period.

I just want to make this correction for those listening to the webcast and in the audience. The next sentence relates to that figure and indicates the maximum individual effective dose to a nuclear energy worker was 7 milliSieverts in 2015, which is 14 percent of the regulatory dose limit at 50 milliSieverts in a one-year dosimetry period.

I will pass the question that you've just asked to Mr. Bert Thériault, our Dosimetry Specialist who is in Ottawa right now and will be on the teleconference line.

MS PURVIS: Good evening, it's Caroline Purvis, the Director of the Radiation Protection Division here in Ottawa. Unfortunately, Mr. Thériault has left for the evening.

I think certainly Christina Dodkin can provide some details. But when we look at the submission frequency of the bioassays for urinalysis, first of all we have to recognize that the urine component for the ascertainment of internal doses due to intakes is trying to catch the fast-clearing uranium compounds that workers could be subject to.

So typically, the urine will be submitted assuming a chronic exposure type of scenario, and they will be looking at the results pre-shift and then of course pre-shift the subsequent shift. So they're looking at a baseline over time.

MR. INGALLS: Dave Ingalls, for the record.

The other thing, I can clarify as well that if an employee is involved in an upset condition, there is a requirement that they also have to submit a

post-shift sample as well. We actually encourage employees, if they believe they've had an update, they can submit a post-shift sample anytime they wish. We have some employees that actually submit a post-shift sample every single day, and that's great that they have that amount of interest, and we encourage that.

THE PRESIDENT: I'll take one just to break the monotony here.

First of all, I've got to tell you that I really like your slides 13 to 21, 22, they're pretty good, with action level in it.

I didn't understand slide 43. I'm looking at your CMD, so it's page 43, Figure 19. So this is ambient air quality is measured by lime candles. It shows two; MOECC ambient air quality criteria for April 1, and then another one for November. What is this?

MR. INGALLS: Dave Ingalls, for the record.

I can allow my colleague, Ms Peters, to give more details if we wish, but the ambient results illustrated here are a result of the lime candles that we have posted around our facility and in the community.

The purpose of the lime candle is it'll react -- if there was a fluoride emission, it reacts with the lime on the -- basically a lime candle is a piece of

paper with lime on it, it will react with that lime, and then we analyze that and assess the amount of fluoride in the sample.

The two bars on there represent a provincial ambient air quality criteria, and there's two of them, and the difference is whether it's in the growing season or not in the growing season.

So during the growing season when fluoride could have an impact on the vegetation the limit is lower than in the wintertime when it's higher. I can allow Ms Peters to elaborate more on that.

MS PETERS: Rebecca Peters, for the record.

I agree with what Mr. Ingalls said. The only addition I would say is that that is based on impact vegetation, it's critical in the growing season based on the impact on animals that would forage on vegetation. So that's why there's the two different limits; one's for winter when the grass isn't accessible, and one's for summer when we've got grass growing.

THE PRESIDENT: So as we discussed in the last two days, I think MOE Ontario and us got to get together and at least explain some of the things and limits that come in from different purposes, some of them are radiological, some of them are toxicity, some of them just

protective. We need to do a better job of explaining this. If we don't understand them, then chances are a lot of other people will not understand this.

So while I've got the floor on this, so is there anything new from the Ministry of Environment in Ontario about, for example, the famous 7,000 becquerels per litre? Is that still the limit or the Ministry of Environment at one time were talking about getting it down to 100. Where is all of this?

MR. BRADLEY: David Bradley, for the record.

My understanding is that limit has not changed as of yet, and I believe it's still under review.

THE PRESIDENT: So far the 7,000 becquerels is the one that is a national kind of accepted limit?

MR. RINKER: Mike Rinker, for the record.

So nationally, with Health Canada, it is 7,000 becquerels per litre as the guideline for drinking water. The provinces set the standards, and in Ontario it is a standard of 7,000 becquerels per litre.

THE PRESIDENT: That's exactly the thing I need clarification. Sometimes it's a limit, sometimes it's a guideline, sometimes it's a protective kind of thing, objective. We've really got to help us on this thing.

It's getting very complicated, not to mention the units, sometimes it's gigabecquerels and sometimes it's terabecquerels, and sometimes it's grams per litre, and sometimes it's kilograms per litre. You know, you've got to help us with this. So we're trying to do some comparisons.

MS MURTHY: Kavita Murthy, for the record.

Dr. Binder, since this is going to be captured in the minutes, I just want to make sure that we are talking about tritium?

THE PRESIDENT: We started at tritium, but then I expanded to the universe of data that you present to us in many many forms.

MR. RINKER: Dr. Binder, if I could, we made some comments about trying to better explain action levels as well. I wonder if we're going to get together and describe units as a topic? Frequently in our presentations in the regulatory oversight reports and in CMDs we provide, if I could use uranium and ambient air as an example, we provide the data of uranium and air as compared to the standard. However, we don't apply an action level to that measurement. It's a very informative measurement to show protection. The action level's often at the stack or some internal process so that immediate action could be portrayed.

So usually the data we put forward, and the same holds for radiation protection, the data that we put forward to be informative to the general public is not the same data that would have an associated action level. But we do have a very strong program of action levels, so I think as a special topic, that might be a proper venue to put that forward.

THE PRESIDENT: You have to explain, some data does not require action because it's the ambient outside the facility. People understand it, but you have to explain it. So I think you may develop an appendix that is some of this stuff in your CMD.

MS SAUVÉ: I'm going to speak up here. Kiza Sauvé, for the record.

You may recall at the last Commission meeting REGDOC-2.9.1 was before you and there was also a presentation made by Malcolm McKee on the selenium release limits. In those presentations we talked about how Part 2 of REGDOC-2.9.1 would start to be developed, and that whole section of REGDOC-2.9.1 will be about release limits and there'll be a lot more information in there about release limits and action levels and the new CSA Standard that's been discussed a few times here will be in that as well.

So we'll be before you hopefully in the nearest future to have that whole document -- and that will

hopefully provide more explanation maybe on release limits.

THE PRESIDENT: Thank you. Ms Velshi.

MEMBER VELSHI: This is my last one. On Slide 51 of Staff's presentation on regulatory focus area. So what you have in there is all very generic standard template stuff. You know, evaluate, performance across all SCAs and so on. I think what I would find helpful is, for this particular licensee, what are your regulatory focus areas for the next licensing period or proposed licensing period?

So any comments on that?

MS MURTHY: Kavita Murthy, for the record.

Evidently VIM is going to be one area that we will have a lot of regulatory effort going in on. We have introduced a new human performance management licence condition, so as the CNSC gets on with publishing documents related to that and as we, as licensees, go on to implement those programs, monitoring compliance with those programs will be another area of focus for us in the next little while.

MEMBER VELSHI: That's exactly what I'm getting at. Rather than giving us this very generic slide, if you were to add specifics like that, then that would be helpful. Thank you.

THE PRESIDENT: So I got two quick ones on

CMD, page 12. I notice the number of staff licensing and compliance activity for 2016, dramatically more, and 2016 is not over yet. So is that because it's a licensing year? I assume you're supposed to have a footnote, this number 3, is it $\frac{3}{4}$, what is it?

MS TADROS: Haidy Tadros, for the record.

Yes, sir, the footnote is captured at the very bottom and represents the current licence period up to June 30th. So the number, as you've correctly stated, is going up.

Partly, that has to do obviously with the licensing hearing that we're here today and the information that CNSC staff have reviewed and has been presented before you as well. The other part as well is the regulatory oversight report. While not quite reflected in the 321 in terms of compliance activities, we do take the opportunity to look at all of the information and bringing the regulatory oversight report together for across the facilities, not just Cameco.

Part of staff's time goes towards being able to do that for the industry as a whole. You'll be hearing about that tomorrow.

MR. THELEN: John Thelen, for the record.

I just wanted to make it clear to the Commission and to the public as well, in slide 17 of

Staff's presentation we did update the information that we were just discussing with a three-month update providing additional information through September 30th.

THE PRESIDENT: Thank you. My last question is we didn't talk about this fissionable materials still in place and the critical activities. What are they? What are these materials that -- are they still using enriched materials? Some of it is legacy, but some of it I think is still activity, is that correct?

MR. INGALLS: Dave Ingalls, for the record.

All of the enriched inventory of materials that we have at site are actually all -- it's actually waste contaminated with enriched materials. We're not --

THE PRESIDENT: So it's all historical data?

MR. INGALLS: It's all historical material at this point. We currently don't have any enriched projects on the go or research going on at the facility at the moment. So all of our inventory at the moment is all historical waste materials stored.

THE PRESIDENT: So you didn't ask for fissile limits? I thought I saw that somewhere in their presentation.

MR. INGALLS: Dave Ingalls, for the

record.

In our criticality control plan we do have a limit on the site of .8 of the smallest critical mass, so we maintain and ensure our inventory is below that threshold.

THE PRESIDENT: So there is a limit on that. So why do you need that? I'm just trying to understand the activity that's required.

MR. THELEN: John Thelen, for the record.

If I could elaborate. There are two site-specific licence conditions that apply to specifically what you're talking about: a licence condition requiring Cameco not to exceed the limit for small quantity of fissionable material; and a licence condition requiring a nuclear criticality program.

For the first licence condition, I mentioned CNSC Regulatory Document 327 defines a small quantity of fissionable material as the total quantity on site that does not exceed 80 per cent of the smallest critical mass, as was mentioned by Cameco. Currently, the total quantity of materials at Cameco's site does not satisfy this definition. In other words, there's not enough material at Cameco's site for a small critical mass, which means that the operations are inherently safe and there's no potential for an inadvertent criticality accident.

However, because Cameco does possess this material, there is a need to maintain a nuclear criticality program with the main objective to account for this material until it is moved off site at some future date to ensure that they do remain under that 80 per cent of the smallest critical mass at all times.

THE PRESIDENT: Okay, thank you.

Anything else? You have the last word.

MR. INGALLS: Dave Ingalls, for the record.

Dale Clark, Mr. Clark, will provide the overall summary, but I just wanted to follow-up on some comments as well about our employees in the interventions we saw here.

It was very striking to me as well, the dedication of the employees working at our facility. All the employees came here tonight and yesterday on their own behalf, nobody was told to come here, they volunteered to come here and share their stories.

To me, looking at our employees, as I mentioned during the presentation, our employees are really what make us successful as an organization. I'm extremely proud of the employees we have, the dedication, they have, and it give me a great amount of confidence that we're on a good path. Our past performance has been excellent, and I'm

confident that in the upcoming licence period of 10 years that we will continue that excellent performance with the great employees we have.

MR. CLARK: Dale Clark, for the record.

I will echo some of those comments. Before I do though, one quick follow-up that I didn't get back to earlier. There was a question about the polling data that we had, and if there were any observed differences in gender, differences that we observed.

So overall, the answer is essentially no, no significant differences. A couple of key points. So, as you've probably heard, the large majority, 89 per cent in the last poll, Port Hope residents support Cameco's operations. No real gender gap in that overall number. There are some minor differences in the level that strongly support versus just support, but in the overall level of support no significant difference.

Eight-five percent, the large majority of Port Hope residents, agree that Cameco does everything possible to protect the people and the environment. Nine out of 10, 91 per cent of residents agree that Port Hope is a safe and healthy place to live.

Similar again with both of those, no real gender differences in terms of the overall numbers. Some minor differences in terms of the level of strongly

support, versus just simply support.

Final comments. I would like to add as well, and largely to echo what you just heard from Mr. Ingalls there. I think really over the last two days you've seen pretty clearly a good example of why we are so proud of our facility and our operations, and also why we are asking, and believe very strongly in our ability, the need for a 10-year operating licence for the facility to continue.

We've spoken to the strong performance that we've seen over the current licensing period. Of course the fully satisfactory rating in all areas throughout the current licence period, you've seen examples such as significant reductions in uranium emissions in one of the key areas of the plant, a 50 per cent reduction in one of those key process emission points.

You've heard about the safety awards and some of the safety performance that we've seen in recent years. Also a commitment to get better, to continue to grow and improve in that area as well.

You've seen the tremendous support that we have I think from the community. I just mentioned the levels of support, 89 per cent overall support from the community. The employees, as we just heard, I think really were the stars from our perspective in the very genuine,

authentic comments, and pride that we saw, the high standards, the quality of those employees. That I think speaks better to the quality of our operations and the pride that we have better than I can do here, frankly.

But then also from the interventions, from many of the interventions from the community and even from some of the interventions that have some concerns, but have also expressed, as we heard with the waterkeepers, that have expressed some confidence in our operations and our ability to continue to do the right thing.

Then, you know, also our commitment to the future and during this next 10-year period, as we've discussed a great deal about, the Vision in Motion project is a very significant commitment and investment that Cameco is committed to and prepared to make into the long-term future of this facility and the community. It's important to Cameco, to our employees and to the community. An investment of that magnitude also does require some of those longer-term assurances and goes along with that, that need for a 10-year licence.

Finally, I would say of note is also that a 10-year licence is not unusual in our industry and with our Cameco facilities, that is we have seen that and we certainly believe that we have justified that with our performance as well.

So again, you can see why we are very proud of our people, our facility, our operations. We're excited for the future, for the next 10 years, and the opportunity to continue to operate that plant safely and to make the many improvements that we've talked about over the last two days.

So thank you very much and that's all I have.

THE PRESIDENT: Okay, thank you. Thank you. This concludes the hearing. I thank everybody for participating.

Marc, what's for tomorrow?

MR. LEBLANC: Well, for tomorrow, so with respect to this particular matter, the Commission will now confer with regards to the information that it has considered in the last two days and then all the written documentation, then determine if further information is needed or if the Commission to ready to proceed with a decision. We will advise accordingly.

Then for tomorrow, we have a big day in front of us; we have two key items: in the morning we will start with regular Commission meeting items such as the NPP Status Report and the CNL update on fitness for duty. That will be then followed by the Port Hope Area Initiative Status Report.

We will start with the presentation from CNL and then follow up with Staff's report on the status.

Then in the afternoon we will do the Regulatory Oversight Report for Nuclear Processing Facilities and Small Research Reactors. I think there's another name in it, so I think SRBT and a few other.

So a big agenda for tomorrow, but it's a meeting in that hearing and we look forward to seeing many of you back tomorrow.

So that's it for me.

THE PRESIDENT: Thank you.

--- Whereupon the hearing adjourned at 6:52 p.m.,
to resume on Thursday, November 10, 2016
at 8:30 a.m. / L'audience est ajournée à 18 h 52
pour reprendre le jeudi 10 novembre 2016 à 8 h 30