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Any leak should be important, especially again at the site of where this crash happened on Montreal River Hill, which is a big body of water as Lake Superior.

We cannot accept the risks associated with the storage and transportation of radioactive waste.

The Anishinabek Nation-Iroquois Caucus and the CNS and the Government of Canada all have the obligation to protect our citizens and the environment.

We do not support the granting of a ten-year licence as we have not been meaningful consulted.

We call upon the CNSC to reject the 10-year application for the Canadian Nuclear Laboratories' Chalk River site. This is critical as currently there is a lack of federal policy governing the long-term management of radioactive waste other than the nuclear fuel. The licensing must not go ahead.

We need to protect the Kitchissippi, Ottawa River. The people of the Ottawa River are citizens and future generations. It is not a legacy we want to leave our children, our future generations.

Thank you.

**THE PRESIDENT:** Thank you.

Anybody? Questions? Go ahead.

**MEMBER SOLIMAN:** In response to the intervenor's concern about the ability of CNL to run the

site, this is given on page 3, first bullet -- first paragraph. Would you please give a short introduction or something about the ability and the capability, experience, history of CNL to run the site?

**MR. COX:** Thank you for the question.

David Cox, for the record.

So our application for a 10-year licence is based on a track record of delivery of safe operations in compliance with requirements and of continuous improvement in a number of areas and founded on the programs that make up, and the people that work, the skills and abilities of our employees, at the Chalk River Laboratories.

And I say that last piece because the foundation of our processes and our people is what makes CNL. And I should emphasize, because this intervention suggests that it's an international consortium that's the licensee, in fact CNL is the licensee and the enduring entity and it's made up of the people and processes that have demonstrated good delivery of safe performance.

It is a significant objective of ours to conduct additional remediation and improve the environmental footprint and reduce the emissions from our laboratory operations in the coming licence period. Our emissions are extremely well characterized and far below



regulatory limits, but we strive to further improve that.

--- Off microphone / Sans microphone

**MR. COX:** I think another point of clarification is around the transition from AECL to CNL, where there's the misconception that there was a loss of employment for a large number people, and in fact really what happened was the company changed names and everyone remained employed. And so there was -- there has been no loss of employment through that transition from AECL to CNL. AECL really changed its mandate and identity as an oversight organization, very skilled at overseeing the contract and activities, and CNL remains the research, science and technology organization that's been described to us this morning.

**THE PRESIDENT:** Thank you.

Questions? Dr. Demeter.

**MR. DEMETER:** Thank you for your intervention.

The 10-year licence has been a recurring theme and I think it's worth asking the frank question, based on historic licences for this site, and I could be corrected if I'm wrong, that the maximum duration for this site has been in the past five years. I could be corrected if I'm wrong.

From a regulatory point of view, what is

the pros and cons of granting a five-year versus a 10-year licence? We've heard from CNL before their request for a 10-year licence, and the arguments thereof, but perhaps confirm that the maximum licence for this site in the past has been -- understanding the trend with other licensees has -- what the time has and what are the -- this has got to be a balance. There's got to be a reason to change the duration of the licence, and perhaps you can address the pros and cons.

**MR. LeCLAIR:** Jean LeClair, for the record.

I think to provide some context we should explain what was a five-year licence and what is being proposed.

One thing we should mention is the licensee applied for a 10-year licence. CNSC Staff reviewed that and recommended based on what the licensee had applied for.

But to come back to how things -- when we have a five-year licence, the normal process that we've been doing over the last licences is you have a mid-term review. So you have a five-year licence, and then around the two-and-a-half-year period there's now a meeting, like what we've -- we've talked a lot about the regulatory oversight report, the annual review. Well, it wasn't an

annual review. It was a mid-term review that would happen.

With a 10-year licence, what we've been discussing over the last few days, the licence term is now 10 years long, but now with regards to appearing before the Commission to actually talk about the performance of the licensee, we've been saying for the last few days that it's annually. So, in fact, we're in front of the Commission often, not less often, than what we might be doing with the longer licence terms.

The difference is -- and this was the premise on why we quite a while back were asking for -- or recommending longer licences. I personally have been involved in other hearings on other files where licences have been are now 10 years long.

The main idea that we were putting forward is the ability for us to then focus more on compliance. I think it's important that we recognize the licensing exercise, what we're embarking on right now, is a significant amount of effort on the part of staff in order to come forward and prepare and appear before the Commission.

When we were going to longer licence terms, the main premise behind that is by moving to these regulatory oversight reports, again, we're still before the Commission, they're still done in a public meeting, but

they're not focused on compliance. They're focused on verifying the oversight of the site, the inspections, the verification activities, which we believe fundamentally is a very important part. It's going out and seeing that they're meeting their commitments, that their programs are effective, that they're delivering on them.

So that's the main direction with regards to going from five-year to 10-year licences.

In the supplemental CMD, in fact, we've laid out why we recommend 10 years. It's on the basis of we've done this across all the licences, and it's that shift to longer licences, however with more frequent appearances before the Commission to focus on performance and talk about potential impacts on the environment, the doses to workers, public doses, conventional safety.

So it's not a reduction, I would say, with regards to how often we would be in front of the Commission and discussing the files. So I hope that provides some context.

**THE PRESIDENT:** Just maybe add a couple of things.

First of all, I'd like you to talk a little bit about benchmarking. Practically all research facilities internationally, in the U.S. particularly, all over the world, what is the normal licensing?

Also, on the shorter period, if I understand correctly, all the effort was on the licensing part rather than the verification part.

And the last thing is: there's also this 10-year public sector review -- what do we call it? -- PSR, which is a 10-year cycle.

So all those dimensions I thought I understand the why.

**MR. LeCLAIR:** So I want to -- before I pass it back to Mr. Jammal, who will provide us the benchmarking in the international context, I just want to touch a bit more on.

We have a team here. In fact, a lot of them aren't here. There's several people sitting in Ottawa right now who have been patiently waiting if a questions comes up to be able to answer it.

The last six months for us have been almost entirely dedicated to preparing for this hearing, so it's hard to -- for people to recognize that our efforts are not these three days, there's about six months of substantial effort for us to get ready for a licence renewal hearing.

Not to trivialize how much effort goes into these regulatory oversight reports, they certainly require a lot of effort as well, but I think it's not

necessarily visible for people the significant amount of effort that goes in.

In fact, if you notice in the table that we presented to the Commission in the CMD, as well as in our presentation, we actually show, and you can see, that the licensing effort actually goes up significantly and the compliance effort goes down.

So overall we still make sure the regulatory oversight is there, the compliance is being done, it's effective, but there's an actual shift in resources in order to focus on licensing.

So I'll pass it back to Mr. Jammal, who could provide us the more -- the benchmarking, to answer Dr. Binder's questions with regards to how other countries operate.

**MR. JAMMAL:** Ramzi Jammal, for the record.

Before I start the benchmarking, I got to recognize the fact that the intervenors have probably a root cause for requesting a shorter licensing term.

Mr. LeClair mentioned how we moved away from a mid-term to an annual report. The key point here is, that, the big difference was when we gave him mid-term reports there was no eligibility for intervention with respect to being a written intervention for comments for the report itself. Currently, with the annual report, the

public has, through the rule of procedure, intervened. So that's a major difference.

In addition, we are providing a participant funding program for the annual report that we did not do for any other reporting to the Commission.

The other point, we moved away from a annual report with respect to the licensee performance. That was being published and no one really cared about it. And that's the evolution that we went through.

A lot of times we published the performance report and it was not presented. It was more presented into an outreach process rather than before the Commission.

Very briefly, we did put in place transparency for the pillars of engagement of the public on an annual basis. PFP is one, interventions is the other, and then putting the emphasis, as was mentioned, on the performance of the licensee during the evolution.

So I do have -- I have empathy for the intervenors, but the key point here is the licensing term has nothing to do with regulatory oversight.

So on the benchmarking internationally, we are one of the -- probably the only one of the international regulators who puts a term on the licence that is not either 30 years or indeterminate. So the

USNRC, for their facilities, they have up to 30 years in the term. The French do not have a licensing term. The UK does not have a licensing term for research facilities or facilities equivalent to CRL.

So the key point here is we are -- as I mentioned yesterday, we are the most transparent regulator. As a matter of fact, I just got an email from a colleague from the Netherlands who is following on Twitter and very impressed with the public engagement in the licensing process that they're trying to learn from us how we are able to do it.

So the key point here is, transparency is paramount and we increased the reporting the Commission and we have supplemented it by the increase of the participant funding and the engagement of the intervenors.

**THE PRESIDENT:** Okay.

I'd like the intervenor now. You heard a lot of stuff. Over to you.

**MR. HARE:** Well, again, it's very hurtful to hear that they're still asking for the 10-year here after listening to the gentleman here earlier who said we still have some regulatory work to do, et cetera, et cetera. So that tells me there's -- they still got a lot of work yet to do, but they're asking for a licence and this work to keep going on. That is not assuring to the



public.

I got up 1:30 this morning. I haven't slept since thinking about what I'm expected or what we're expected to do and say here. But it is very harmful.

Again, I want to reiterate, the top government of this country, to keep them intact and in line and accountable, we do that every four years. That's the highest government in this country. We cannot let stuff and people like this come here and just do what they want at our expense.

Losing a life, there's no money dollar figure to that, please. And the losing of life of animals, that's our life. That's us. If we don't have that, if the Ottawa Valley should ever be poisoned, are we going to go through Fort William, and that corridor, the Wawa corridor, to ask them for some water to be transported here so the people of Ottawa can live like us?

Let's not wait for that to happen, please. The town that lost -- that I talked about earlier, that's one hell of a price to pay: to direct the railway now around the town. There's no dollar figure on that.

This land belongs to each and every one of us no matter what colour we are. So again I ask not the 10-year. Include us at the table, that's all we're asking. We have no funding to do -- to be up here today as I am and

representing. We had no funding, no money to do what we've done so far. And we're trying to do the right thing. We're trying to get people involved.

The way we do consultation, we do it face to face. I meet. In my 12 years at the Deputy Grand Council, Chief of the 41<sup>st</sup> Nation communities, when I consult with our citizens, I've travelled, literally, myself, on the land 1.6 million kilometres already in 12 years. And what I have achieved, the Grand Chief and I, and our leadership today, and especially our identifying the education, it went so smoothly. That's because everyone had a say.

So again *meegwetch* for listening to me, and, please, let's listen to our people.

My last three words is never say never.

Thank you very much.

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

--- Applause / Applaudissements

**THE PRESIDENT:** I'd like to move now to the next submission, which is an oral presentation from Ms. Buckingham, as outlined in CMD 18-H2.40.

**MR. LEBLANC:** She's online, so by telephone.

**THE PRESIDENT:** Ms Buckingham, can you

hear us?

**MS BUCKINGHAM:** Hello. Can you hear me?

**THE PRESIDENT:** Yes, we can. Please proceed.

**CMD 18-H2.40**

**Oral presentation by Darlene Buckingham**

**MS BUCKINGHAM:** Okay.

I would like to say quickly before I begin that my oral presentation is different from my written submission, which was done at the eleventh hour to meet the deadline. I hope you find my oral presentation more thorough.

So, Commissioners, for the record my name is Darlene Buckingham.

Thirty percent, this is the percentage of people that, when their health and lives are in danger due to their choices, will make the changes necessary to heal and thrive.

Chalk River Laboratories was first opened in 1944, built in wartimes for military purposes. The reactor that generated the first electricity from nuclear energy on December 20<sup>th</sup>, 1951, for civilian purposes, was led by Enrico Fermi. The first commercial

electricity-generating plant powered by nuclear energy, located in Pennsylvania, was opened by Eisenhower on May 26<sup>th</sup>, 1958.

Over the past 60 years it has become abundantly clear the problems inherent with nuclear energy, for which to this day there is no satisfactory solution, continue unsolved.

The ideology of human supremacy leads us to believe that humanity's cleverness allows us to ignore the parameters placed on all life forms by the larger living world, of which we are only one component. This ideology is not adequate to deal with the cascading problems presented by the usage of nuclear energy and the accumulation of toxic nuclear waste.

Thinking that these problems will be solved when looking at the destructive nature of uranium are a two-edged sword. Uranium is unstable, able to be fissioned, creating a long-lived heat source, making it perfect for boiling water used to power generators.

However the sword edge is this energy cannot be turned off with the flick of the switch. The radioactivity continues on for many hundreds of thousands of years and has to be dealt with in a complicated, expensive procedure that in 60-plus years is still only temporary. A final safe resting place for nuclear waste

has yet to be found.

It is important to remember that the first purpose of uranium was for war, an efficient killing substance. It is admirable to look for peaceful ways to use uranium, but the very nature of its destructive powers do not translate into an energy source that can be used effectively and efficiently.

Due to the instability of uranium, ways to recycle nuclear waste have not been found that do not still produce nuclear waste. The methods available for reprocessing are cost-prohibitive, plus produce plutonium, used in nuclear weapons.

Nuclear holocaust is mutually assured destruction, and in the public eye at the moment, with people such as Trump and Kim Jong-un hurling nuclear threats at one another, the strongest human instinct is to survive, so these threats are, we trust, more than likely that, just threats.

However, continuing to have uranium in play does affect the quality of life and puts a long life in jeopardy. Do we want to survive or thrive?

People are experiencing what has been termed, in quote, "institutional betrayal" where organizations do not effectively respond to problems or unexpected events. There have been two major accidents at

the Chalk River facility, the first December 12<sup>th</sup>, 1952, and five years later, in 1958. There are people involved in the cleanup of these accidents who feel betrayed by the industry that they were not properly compensated for their role in cleaning up the accidents and that there was no follow-up to see if the population of people involved in these accidents showed a higher than normal incidence of cancer.

There is anecdotal evidence that indeed some men's health were affected, and who died from cancers, but because there was no follow-up it cannot be said for certain. This was a perfect opportunity for follow-up and a big question knowing that radioactivity does cause health problems that a follow-up was never conducted.

We see the same betrayal scenario over and over in the more recent serious nuclear accidents, such as Chernobyl and Fukushima, that to this day are hotly contended by professionals in the medical field and that so profoundly adversely affect the lives of millions of people.

People are in an ongoing learning curve about the consequences of using uranium, from it being a miracle cure, when radioactivity was discovered in 1896 by Henri Becquerel, and was even called magic radiation.

When polonium and radium were discovered

by Madam Curie, in 1898, the use of radium became commonplace by the 1920s, used to treat every kind of disease. At this time it was considered that it would be good for health to drink a glass of radioactive water a day, prepared by using, of all things, a radium percolator.

This period lasted for more than 25 years, when usage decreased dramatically when the dangers of using radium became apparent. As we use uranium more and more, the dangers are revealed. Sixty years is but a blip in time with a growing body of knowledge that becomes clear as time passes that the benefits of using uranium causes more problems than it is worth, as well as the medical use of radioisotopes does come with enough problems that moving further away from their use to other treatment and diagnostic tools makes good sense.

This is another hotly contended topic. The use of radioisotopes, due to their unstable nature, that decay to stable isotopes can cause harm during their decay. "Justification" is a term used to determine if the harm of exposure is less than the benefits of this exposure.

What is the minimum exposure and dose? Hereto is a growing body of research and knowledge that there is less and less justification to be using radioisotopes in treatment and diagnosis of disease and

that any exposure and dose of radioisotopes can have deleterious consequences to long-term health and longevity. New ways to deal and diagnose illnesses have to be explored.

There is also a growing problem that used radioactive materials are accumulating in hospitals and research installations around the world, including Chalk River. What is going to happen to the intermediate- and high-level waste materials after the NRU is shut down? Will it become a nuclear waste site?

How can dealing with nuclear waste not be in the scope of a 10-year licence? This is an ever-present problem with nuclear waste and becomes a larger problem every day that uranium continues to be used.

Everything in life is about the use of energy. Think of people who make dietary choices that fuel bodies who decide to eat a diet high in sugar and processed foods. There's a growing body of research that with different dietary decisions these same people may have lived a much longer, healthier life.

What differs here, too, is that these are personal decisions that affected quality of life.

The decision use uranium is being made for others, so there is a huge responsibility to choose wisely and make decisions that support life to the fullest. We



can all see that there are many people that, once they become more informed about uranium, come to the conclusion that they would never have chosen to use this form of energy and have not consent to the risks that the regulatory bodies have deemed to be safe.

In quotes, "regulatory capture" is where a regulatory body advances the concerns and special interests of the industry it is charged with regulating at a cost to public interest. This has created an environment that does not pay attention to the parameters set by the real world in which we all inhabit. This is a human foible that, due to the ever-increasing negative consequences, has to be continually looked at.

Solutions will not be found in trying to escape the limits of the real world, but in deepening our understanding of these limits, and in fact may discover that what we now think of as limits will open doors to solutions that will create a world that is much better than the one we have now.

Humanity is at a crossroads, where we are continually learning the downside to using uranium, and at the threshold to move towards the production of energy that is regenerating. The decisions made here going forward have to be in the 30 percent that allow life to thrive to its fullest potentials. This is where hope in our future

lies in the choices we make.

For now uranium has to be closely monitored and follow-ups made at every opportunity. Nuclear energy cannot be turned off and left alone. Everything in life requires taking care; however, taking care of uranium so that it does not cause harm is proving to be very difficult.

So for today, we have to be the 30 percent, knowing that there has to be change to thrive, not survive, and take the action to shorten the relicensing period of the Chalk River Laboratories from 10 years, acknowledging how important it is to closely monitor and stay on top of nuclear substances as research advances and continues to show just how dangerous the use of uranium is to health and to all life, as well as know that all steps to transition to renewable energy have to be made with no new nuclear builds.

Thank you very much for this opportunity to speak before the Commission. It is in free speech and with open minds that viable solutions are found, where we, as a species, can live and thrive with all life.

**THE PRESIDENT:** Thank you.

**MS BUCKINGHAM:** Thank you.

--- Applause / Applaudissements

**THE PRESIDENT:** Questions? Questions?

Okay, thank you for your presentation.

**MS BUCKINGHAM:** Okay, thank you.

**THE PRESIDENT:** We will now take a 20-minute break, which will bring us to 10 to 11.

Thank you.

--- Upon recessing at 10:27 a.m. /

Suspension à 10 h 27

--- Upon resuming at 10:50 a.m. /

Reprise à 10:50 a.m.

**THE PRESIDENT:** Okay. We are ready to proceed.

So, the next submission is an oral presentation by Ms Hrycyna as outlined in CMD 18-H2.43.

Please correct me.

**CMD 18-H2.43**

**Oral Presentation by Bozena Hrycyna**

**MS HRYCYNA:** Thank you. My name is Bozena Hrycyna. That was pretty close.

**THE PRESIDENT:** Okay.

**MS HRYCYNA:** Good morning.

So, I'm here today to join my voice to the

many voices opposing the renewal of the licence for the Chalk River facility. I'm here today because I know in my heart that we must move forward in a new way. To speak of the present and the future, we must speak of the past.

And the Chalk River site is just one of many sites, as we all well know, that has been a place of irresponsible handling of life-threatening radioactive materials.

I am grateful to Ms Buckingham who spoke before me for so clearly setting out the facts about the history of nuclear energy in general and of the Chalk River site and the accidents that happened in the 1950s.

As other intervenors have so passionately put forward, we must consider the history of waste dumps, leaks and inadequate safety measures that are part of our atomic energy legacy in Ontario.

It is easier for us to follow the current course that has been set to debate for hours and days whether a licence to operate the Chalk River facility should be renewed, without questioning first whether this facility really needs to and ought to continue operating at all. That is the question that I know must seem irrelevant or absurd at this point, but perhaps what it is is inconvenient. And the truth is, the by-products of the nuclear industry are permanent and lethal, no amount of

nuclear waste is acceptable.

As other inconvenient truths, the enormous amount of labour that goes into avoiding them could be redirected into finding a way to operate differently in a paradigm of possibility, rather than one of scarcity, to forge a gentler and better way.

Our human propensity for hubris makes it easy to scoff at the notion of a Doomsday scenario or confidently state the so-called enduring entities will continue to operate indefinitely in the best interests of all the people.

As I have been intently listening to the many interventions over the course of this hearing, I have been deeply touched by the level of care and dedication that so many people, especially concerned citizens, have put into defending the interests of us all, that is, our continued safety and well-being.

This care and faith is something more lasting, more enduring than any multi-national consortiums, experimental facilities, Crown corporations and GOCOs.

I have heard most of the arguments for and against the licence renewal that have been presented here. I am grateful for those who spoke truthfully and with integrity, especially those who spoke from their hearts.

At this point I do not think there is need

for many more words, but I would like to tell a story. You may know this story, but I wonder if you carry it the same way that I do.

My family, my people come from Ukraine, a nation plagued by the enduring legacy of a nuclear fallout, as we all know. The radioactive particles that were released into the air and, consequently, into the land and the water with the meltdown of the Chernobyl Power Plant on April 26, 1986.

I grew up in the shadow of this horrific reality. My family and all the people of Ukraine, especially Belarus, living in utter fear and uncertainty for their lives.

As a long-time volunteer for humanitarian activities in Ukraine directed at helping children, especially orphans, who receive medical aid and support through the Children of Chernobyl Canadian Fund and Help Us Help the Children, I have witnessed first-hand the crippling, the sickening effects of long-term radiation exposure.

Today as we speak radiation in the soils of Ukraine continues to poison my people who live on the land and who will continue to do so for as long as we can imagine human life on this earth.

This story is not science fiction, it is

not an anomaly produced only by the dysfunction of the corrupt Soviet Union. Lest we forget Fukushima. It must serve as a very potent reminder of what is at stake here.

It's my desire to live a long and healthy life, to live free of the unsolicited burden of radioactive waste disposal, free of the fear that such potentially lethal materials will endanger the health of my future children and my family.

As you have heard other young people speak at this hearing, we do not want it. Now is the time to make wiser decisions.

To conclude, all I would say is I would echo the words of others who came before me and offer a prayer.

A prayer to the Creator to guide us in wisdom and love so that we may all know in our hearts how to proceed for the benefit of all creation and future generations, that we may know that we are sacred beings who have been given the gift of life, that we may honour this gift, may we use our immense power and strength as human beings for the creation of all that is good, clean and safe for all future generations. Amen.

**THE PRESIDENT:** Thank you.

Question? Dr. McEwan?

**MEMBER MCEWAN:** Thank you for the

submission and the presentation.

A couple of questions. One is one that I've asked before, and in your submission you mention, again, the perceived reduction in regulatory oversight that people read into the licence.

So, you listened to some of the explanations of the staff and how the restructuring has been maintained and maybe increased the opportunity for rigorous oversight.

Does that give you any comfort, that there remains a strict regulatory regime looking at the way in which the site operates?

**MS HRYCYNA:** Thank you.

I don't think I specifically referred to that. I mostly -- I'm really concerned about the disposal of the waste which hasn't so directly been addressed here and which will be addressed later.

I don't really have comfort because I understand what people have been saying about the regulatory oversight, but I also understand human nature.

**MEMBER MCEWAN:** If I may, when did you leave the Ukraine?

**MS HRYCYNA:** I was born here. My family was still in Ukraine, yeah.

Thank you.



**THE PRESIDENT:** Any other question?

Okay. Thank you. Thank you for your presentation.

**MS HRYCYNA:** Thank you for your time.

--- Applause / Applaudissements

**THE PRESIDENT:** The next submission is an oral presentation by Northwatch as outlined in CMD 18-H2.46 and 2.46A.

I understand that Ms Lloyd and Ms Blaise will make this presentation.

**CMD 18-H2.46/H2.46A**

**Oral presentation by Northwatch**

**MS LLOYD:** Good morning, President Binder, Commission Members, and staff.

My name is Brennain Lloyd from Northwatch and we are pleased to be here before you. It took a moment to get set up. I had a perfect storm of technology failure this morning. So I have got a mix of different pieces of paper.

Pardon me?

**THE PRESIDENT:** It wasn't nuclear.

**MS LLOYD:** It was not nuclear definitely. This is Northwatch.

So my name is Brennain Lloyd and I work with Northwatch. We are a regional coalition in northeastern Ontario. Our focus today in this proceeding is on the radioactive waste management practices at the Chalk River Laboratories.

So Northwatch and CELA have worked together to draft the joint submission that is before you.

Northwatch's interest is in the potential for the radioactive waste management practices, programs, and endeavours at the Chalk River Laboratories site to be either precedent-setting or become normative in terms of decision making with respect to nuclear matters in Ontario, and then potentially have future effect in Northwatch's area of interest, which is the neighbouring six districts of northeastern Ontario. Our part of the focus has been to evaluate the waste management practices at the Chalk River site.

And I am joined by my colleague, Kerrie Blaise, from the Canadian Environmental Law Association. I will pass it over to Kerrie at this point.

**MS BLAISE:** Good morning, Commission Members. As you know, I am Kerrie Blaise from the Canadian Environmental Law Association, and as this is a joint submission from Northwatch and CELA, I will just briefly introduce what CELA's component of the review was.

So CELA sought to identify principles which should inform waste management. So we conducted an interjurisdictional review of what are the best practices, the best principles, which should inform a licensing basis for waste management.

So we started with a working definition of waste management, and we adopted the one used by the International Atomic Energy Agency, which I have included on this slide, and I will briefly read for you.

Waste management included all activities, administrative and operational, that are involved in the handling, pre-treatment, treatment, conditioning, transport, storage and disposal of radioactive waste.

So our extensive review of international documents, treaties, and policies allowed us to identify five sets of principles. These I have identified on the slide for you. I am not going to elaborate on each of these principles, but I would direct you to pages 7 through 18 of our full submission where I do provide an overview of the principles, their significance and their relevance to this licence.

So we took these principles and we sought to identify if they were included in the CSA standards, which are now incorporated by reference in the proposed Chalk River licence. Our goal was simple. We just wanted

to evaluate whether (a) these principles were enforceable or (b) whether they form the basis for licence and compliance and verification.

What we found was that the majority of the principles were either absent from the CSA standard or, if they were included, they lacked a measurable benchmark for enforcing compliance. This was the case for the principles of waste minimization and prevention, environmental protection and sustainability and proximity.

For the principles of recordkeeping and waste characterization, we actually found something different. We found that while they may be in the CSA standards, they were referenced as guidance documents and not in the compliance verification portions of the licence.

We also found there was some legislative gaps as well that -- so irrespective of the CSA standards. We found that because CNL's application covers a host of facilities and activities that their treatment under the *Nuclear Safety and Control Act* isn't the same for each of the facilities and each of the activities. So there were differentiations we found based on that which we addressed in our report.

And based on our findings, we made a series of recommendations to the Commission with the view that these waste management principles that we identified

should be incorporated into the basis for licensing. I am not going to read out our recommendations to you, but I just will note that they are included in our PowerPoint and in our submission.

Thank you.

**MS LLOYD:** Thank you.

With respect to the waste management part of our review, so in preparing for our review we looked at a number of documents, certainly the CMDs, performance review report from 2013, the preliminary decommissioning report, and we identified what we thought were the three key questions to guide our review.

That first question was: Has AECL provided adequate information with respect to waste management, primarily in their application to renew their operating licence?

We looked for guidance at the general *Nuclear Safety and Control Regulations* requirement. It sets out, we think, quite clearly that the application for the licence is to contain information describing volume, quantity, characteristics, and so on of radioactive waste to be generated, stored, managed, processed at the facility during its licence period.

So we looked at, reasonably enough, CNL's application, a brief exercise, and my summary will be

brief. It did not include that information. At best, in Attachment B, it included a set of references to documents they provide to the CNSC and those documents may include that information. There is no way for us to ascertain that.

But I think the question is did they meet the requirement of the regulation? They did not. It is not included in their application and that alone should be, you know a stop sign for the Commission in terms of approving this application.

The second question that we asked was: Are CNL's practices of accepting additional radioactive waste from external sources exacerbating the waste management challenges at the Chalk River Laboratories?

There is no dispute that there are large challenges in managing the waste already on site at Chalk River, and there is no dispute that part of CNL's practices is to continue to import waste to their site from other operations. They acknowledge that in their application.

We looked at the documents they provided for any additional information. There were several very general references to the fact that they do accept waste from third parties.

We looked at the full suite of regulatory oversight reports that have been much referenced in these

last three days. We found in the regulatory oversight report on uranium and nuclear substances processing, a few references. In our overall review of that report where we had some interaction with the licensees, we learned that SRB and Nordion do send their waste to Chalk River. We assume that others, Best Theratronics, for one, also do, but there was no information available and the licensee did not provide information, claiming proprietary interest.

We can -- we ascertain from an application to the NRC some time ago that Cameco potentially sends waste to Chalk River, because there is a single application that named nine consignees, including one in our region, Cameco's Blind River facility. We have not yet been able to determine that there are any controls beyond the NRC application process which says waste is coming into the U.S. from nine consignees and will be returned back to those nine consignees.

We then looked at ADAMS, the U.S., NRC's online public registry. It is quite a useful tool, voluminous, a little bit hard to handle initially but voluminous. We found there -- we looked at over 1,000 documents online. We downloaded 238. From them we were able to determine that there were a number, numerous shipments of radioactive material.

I think the ATU shipment was the most

contested and most documented item on the registry. But, in addition, numerous waste shipments, things like uranium-contaminated zirconium, tritium gas, stainless steel; a number of different shipments of radioactive-contaminated metals, medical waste, mixed waste, contaminated waste; hospital waste from a whole variety of facilities which you can see identified on the map on the screen.

It did seem the majority of cases were returning materials, material sent from Canada to the U.S. for processing, but there seems to be no overall tracking system. There is no identifiable system in place for tracking these wastes.

There seems to be -- the third question was with respect to: Is CNL making adequate progress in addressing the legacy waste and liabilities on the site? There was very little information.

Now, I am running out of time so I am going to go very quickly -- very little information provided in the CNL documents on what we identified as three key challenges, dealing with the tiles, dealing with the fist, and dealing with the plumes. Very -- what really was lacking was any clear sense of urgency, any milestones, any progress report in meeting those milestones.

We have had some discussion. We have



heard what was stated in their report repeated here, a little bit added to it, but in our view there's real need for those milestones, and a real need for a third party overview of that, and that's lacking. Not only is detail lacking but any kind of sense of timelines, and so on. We made a number of recommendations, as Kerrie has already referenced.

In conclusion, with 35 seconds left, we do urge the Commission to deny the application. We recognize they can't operate without a licence, so maybe it's a very short term delay while they meet the most immediate needs, for example, describing meeting the regulatory requirements, and including a description of the waste should be easily done. But they really should be limited to a one or two-year application term. We had recommended a one-year term. We would not cry foul at two or three years.

We have heard many references throughout the last three days to these annual reports. Initially, we thought is this the performance report? The last one we have seen was 2013. We have slowly, you know puzzled through, and concluded it's the regulatory oversight reports. Ms Tadros, I think, clarified that yesterday with her reference to the December 2017 Commission meeting in Port Hope. That looked at two regulatory oversight reports

that Northwatch had reviewed and commented on. Neither of those included information about the Chalk River site.

We reviewed last night the full suite of regulatory oversight reports from the last three years. We find no information, substantive information, on the Chalk River site. There is not an opportunity in the review of the regulatory oversight reports to engage with the Commission. They are very summary reports on the information that was provided.

I will just finish by saying our experience -- reminding you of our experience with the Blind River licence, the uranium refinery licence went from two years to five years, to 10 years. We are at the five year -- last year we were at the five year mark, and at the five-year licence there was a mid-term performance report which was substantive.

So last year, seeing we were at the five year, I requested the mid-term performance report and was referred to the regulatory oversight report which had the standard half-dozen to a dozen pages describing the Blind River facility operations, in no way a replacement for the mid-term performance reports we have under five-year licences, in no way a replacement for a licence review.

So with that I apologize for going slightly over time; so much to say, so little time. Thank

you.

**THE PRESIDENT:** Oh, you're going to have a lot more chance to say.

**MS LLOYD:** Okay, good.

**THE PRESIDENT:** Okay. I think you lined up some pretty interesting issues. So who wants to get going?

Dr. Demeter...?

**MEMBER DEMETER:** I'll just change course a little bit. Throughout our hearings to date, we have heard very little intervenors' thoughts on emergency procedures and the emergency preparedness. In your written CMD, you brought it up twice as a collection.

Do you have any comments, observations on emergency preparedness related to this site?

**MS LLOYD:** Brennain Lloyd, for the record.

I'll make a brief comment and pass it to Kerrie to see if she has something to add.

My concern with the Chalk River site and emergency planning that we might see a reduction in emergency measures with the shutdown of the NRU. We saw that with Gentilly and we were very concerned about that.

So in our view, as long as there is a hazard onsite, the emergency planning should remain full tilt and shutting down the NRU should not result in a

reduction of emergency planning and emergency response measures.

I am going to hand it over to Kerrie for any additional comments.

**MS BLAISE:** Thank you, Member Seeley.

To that I would just add the scope of our review was nearly exclusively on waste management as we did propose in our -- for the application. So emergency planning wasn't a focus.

But for further resources I would direct you to the CELA website or the Northwatch website. The CELA website, [cela.ca](http://cela.ca), has a publication page and an emergency planning subsection where all of our recommendations on emergency preparedness, as recent as a few months ago, are posted.

**THE PRESIDENT:** But we do have the Office of the Fire Marshal online. It's a good opportunity at least for -- this is, I think, the first time in our proceeding that they will explain to us the new and improved PNERP, which is the Provincial Nuclear Emergency Plan.

**MS LLOYD:** If I could add, President Binder, I would refer you -- CELA did do a substantive submission at the last -- at the licence extension hearing. I would also encourage you, if we are going to hear now

from an unscheduled intervenor on this that we have the opportunity to bring Theresa McClenaghan, the Executive Director of CELA --

**THE PRESIDENT:** No, we're making reference specifically to your observation on emergency and the fact the NRU is going down. So it's a good time for us to know what the impact on emergency planning is. We have not only the Ontario but we have also the Quebec -- Sécurité publique ici -- and you can hear from both sides about any remaining emergency planning concerns.

So can we start with the Office of the Fire Marshal? I understand it is Mr. Nodwell.

**MR. NODWELL:** Correct. Good morning, Dave Nodwell here.

**THE PRESIDENT:** Go ahead, please.

**MR. NODWELL:** Okay. Thank you, and good morning. It is Dave Nodwell. I am a Deputy Chief with the Office of the Fire Marshal and Emergency Management, for the record.

So perhaps what I may do, President Binder, is provide an update on the work that is being done related to the Provincial Nuclear Emergency Response Plan and then go into more specific detail in terms of the implementing plan for the Chalk River site.

So on that basis there has been a

significant amount of work that has been done over the past couple of years related to the Provincial Nuclear Emergency Response Plan. For those not familiar with that, I'll be referring to it as the PNERP from this point forward.

This started with the development of a planning basis discussion paper, so taking a new look at an assessment of the risks and the hazards. That particular document, in addition to proposed changes to the PNERP, was publicly posted for public consultation in the late spring, early summer of 2017. During that 60-day period, we had a tremendous response. We had approximately 1,600 submissions that were submitted related to that, and certainly a wide variety of opinions and perspectives.

An independent advisory group was formed to address all those submissions. So this was a group of people with a variety of expertise from nuclear to emergency management. It also had some international representation on the committee. So it was as objective as possible. This advisory group was tasked with reviewing the submissions and making recommendations to the Minister.

The advisory group met towards the end of August, the 21st to the 25th specifically, but did a lot of work subsequent to that in order to deliver the report to the Minister. It was delivered in September and was received. The recommendations were agreed to. Based on

that direction that we received from the Minister the PNERP master plan was updated and was approved by Cabinet toward the end of December in 2017.

At this point in time, for those familiar with the PNERP, we have seven implementing plans which we are currently working on. The primary focus right now is on some of the larger power reactors, Bruce and Pickering, in particular.

There is a specific implementing plan for Chalk River and that will need to be assessed. I think I may address the comment that was made earlier with respect to concern about reduced emergency measures with the NRU being shut down. Once the NRU is shut down there will have to be an assessment of the risk that is posed by, well, what remains, quite frankly. I think it is important that emergency plans and emergency measures be appropriate to the actual risk.

Once that risk assessment has been completed it would be reviewed with stakeholders, including CNSC staff, Health Canada, Ministry of Health and Long-Term Care, and other stakeholders that are involved in nuclear planning in the province. That recommendation would be made to the Deputy Minister and, ultimately, the Minister with respect to planning that would go forward for the Chalk River site.

To put it into perspective with the -- of course, the primary focus of the implementing plan is on the NRU. There was a very detailed assessment done in 2004-2005, an independent study of the area. It concluded that in a severe accident arriving from the NRU, sheltering would not be required beyond eight kilometres, evacuation not beyond three kilometres, and KI not beyond one kilometre. There was a subsequent analysis done which basically confirmed and validated that information.

Nonetheless, despite that, the decision was made some time ago that the primary zone for Chalk River, or the detailed planning zone, as it's known now, would be in fact nine kilometres.

One of the unique differences with this site as well, I would point out, is that the exclusion zone is significantly larger at Chalk River, it's approximately six kilometres that is within the site boundary, if we contrast that to a power reactor in Ontario where it is generally at about one kilometre.

We would do that risk assessment. Whether that leads toward a specific implementing plan for Chalk River or not, I can't speak to that, that would depend on the risk assessment.

However, there is another implementing plan which is called the other radiological plan. That



implementing plan deals with all other radiological or nuclear potential issues. It deals with sites, such as the McMaster research reactor, the reactor at the Royal Military College, it deals with transportation issues, facilities like Cameco, and so on and so forth. Based on that risk assessment, it is a possibility that we would look at moving that to the other radiological plan, but again I'm speculating on that because it really boils down to a risk assessment.

That provides an overview I think of where we are and where we're going with the PNERP. I'd certainly be open to address any other questions that you may have.

**THE PRESIDENT:** Thank you for this overview. It's very useful.

Now I'd like to hear from Mr. Lessard. Est-ce qu'il y a des commentaires?

**M. LESSARD :** Gaëtan Lessard, directeur régional de la Sécurité civile pour la Région de l'Outaouais.

Non. Je confirme que la position du Québec par rapport au Plan de mesures d'urgence s'aligne beaucoup avec la position de l'Ontario. C'est-à-dire que notre Plan de mesures d'urgence va rester... va demeurer effectif tant et aussi longtemps qu'il n'y aura pas une nouvelle analyse de risques qui va être produite après le

déclassement, et notre tendance est aussi à s'aligner vers un plan qui ne sera peut-être pas de mesures d'urgence nucléaires mais radiologiques. Considérant que les plans sont souvent basés sur le pire scénario possible, le pire scénario possible actuel était en lien avec le réacteur NRU. Donc, le nouveau pire scénario possible sera peut-être plutôt en lien avec un incendie sur le site ou le transport de matières dangereuses.

**LE PRÉSIDENT** : Merci beaucoup.

Any questions while we've got the Office of the Fire Marshal on the line? I think it was pretty comprehensive.

Do you want to make a comment on that?

**MS LLOYD**: Yes, please Dr. Binder.

Brennain Lloyd, for the record.

I just want to note to the Commission that the PNERP came out December 22, 11 days after our submission deadline, so I have not looked at it yet. I believe that at least Ms McClenaghan at CELA has, so I would hope that you would consider some additional comments from us specific to this given these developments.

**THE PRESIDENT**: Just for clarity, he is not an intervenor, he was invited by staff to actually comment on some of the stuff here.

You will have ample opportunity to deal

with the Office of the Fire Marshal in all kinds of hearings coming up.

**MS LLOYD:** So, for the purpose of this comment, just substitute intervenor for invitee, and I would just encourage the Commission to ensure that, and I think it's within your abilities to do this, your regular stakeholders, public interest intervenors like Northwatch, like the Canadian Environmental Law Association, like the indigenous organizations, are included in that review of the NRU risk analysis when it comes to that time.

**THE PRESIDENT:** I think PNERP already said that they are going to review whether they -- the PNERP is there, it's provincial, so they'll have to do the review, but I'm sure our staff will be watching it.

Maybe you should add the question how you're going to interact with PNERP if it's going to be modified.

**MS TADROS:** Haidy Tadros, for the record. Once a risk assessment by CNL has been conducted once the NRU shuts down, CNSC staff obviously do get involved and review it.

I would ask Mr. Richard Tennant to speak to sort of the linkages we have with the Ontario Fire Marshal's Office and the Quebec agency for security of the public.





































































































































































































































































































































































































































































