

**Canadian Nuclear
Safety Commission**

**Commission canadienne de
sûreté nucléaire**

Public hearing

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Le 6 mars 2020

Regency Ballroom
Holiday Inn Peterborough Waterfront
150 George Street North
Peterborough, Ontario

Salle de bal Regency
Holiday Inn Peterborough Waterfront
150, rue George Nord
Peterborough (Ontario)

Commission Members present

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

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Avocate-générale principale :

Ms. Lisa Thiele

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Peterborough, Ontario / Peterborough (Ontario)

--- Upon commencing on Friday, March 6, 2020
at 8:30 a.m. / L'audience débute le
vendredi 6 mars 2020 à 8 h 30

THE PRESIDENT: Good morning and welcome to the continuation of the public hearing of the Canadian Nuclear Safety Commission. Welcome also to those joining us via webcast and videoconference.

My name is Rumina Velshi, I am the President of the Canadian Nuclear Safety Commission.

I would like to begin by recognizing that the land we are gathered on is the traditional territory of the Mississauga Anishnabeg peoples and in the territory covered by the Williams Treaties.

For those who were not here yesterday, I will begin by introducing the Members of the Commission that are with us for this public hearing.

On my extreme right is Dr. Sandor Demeter; starting from my immediate left are Dr. Stephen McKinnon, Dr. Marcel Lacroix and Dr. Timothy Berube.

Ms Lisa Thiele, Senior General Counsel to the Commission, and Mr. Marc Leblanc, Secretary of the

Commission, are also joining us on the podium today.

We have had four fairly long days of hearings this week and I just wanted to let the different intervenors and parties know that we will be restricting our questions on new issues, new concerns that have been raised. We have probed many of the issues quite extensively over the last four days, so in the event that we don't ask questions it doesn't mean that we haven't heard you, it's just that we have probed those issues before.

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

Marc...?

Opening Remarks

M. LEBLANC : Merci, Madame la Présidente.

During today's business, we have simultaneous interpretation. The English version is on channel 1. La version française est au poste 2.

Please keep the pace of your speech relatively slow so that the interpreters, who have done an incredible job all week, have a chance to keep up.

I would also like to note that this hearing is being video webcast live and that the hearing is also archived on our website for a three-month period after the close of the hearing.

Transcripts are kept of these proceedings and the transcripts will be available on the website of the Commission in about two weeks. To make those transcripts as meaningful as possible, we would ask everyone to identify themselves before speaking.

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

Yesterday we heard the presentations by 22 intervenors, which had followed Wednesday's presentation by several other intervenors, and we addressed last evening -- yes, that was evening -- all of the written submissions.

So 21 intervenors are scheduled to present orally today. Ten minutes are allocated for each presentation, with the Commission Members having the opportunity to ask questions after each presentation.

To help you in managing your time, a timer system is being used. The light will turn yellow when there is 1 minute left and turn red at the 10-minute mark.

Your key contact persons will be Ms Louise Levert and Ms Julie Bouchard from the Secretariat staff and you will see them going around or at the back of the room at the reception desk if you need information regarding the timing of presentations or any other logistical considerations.

We anticipate taking a break for lunch around 12:30 and a dinner break is not planned for today as we anticipate closing by the end of the afternoon. So there will be morning and afternoon health breaks, obviously.

Madame Velshi...?

THE PRESIDENT: Thank you.

The first presentation this morning is by Ms Kaia Martin, as outlined in CMD 20-H2.80.

Ms Martin, over to you.

CMD 20-H2.80

Oral presentation by Kaia Martin

MS K. MARTIN: Hello. My name is Kaia Martin. I am 16 years old, turning 17 next Thursday. Since I am young I hope you consider the importance of my

voice. My body is still growing, which means I will be more at risk from radioactivity. I am the one who will live out the fullest effects of BWXT's potential dangers.

BWXT is centrally located in my life. I live a 10-minute walk away from the plant and I have lived here since I was four years old. I am forced to walk directly beside BWXT to get from my house to my part-time job at the YMCA. Because I spend so much time so nearby BWXT, I am at the mercy of the decisions that you will be making. That is why I am speaking to you today, because other than this I feel powerless in a decision that could cause me serious harm.

I spent all 10 years of my elementary schooling at Prince of Wales Public School, located, as you know, directly across the street from BWXT. I know that kids play outside every day at recess because I was one of those kids. I saw many younger kids putting things in their mouth from the ground. Prince of Wales has three different yards for different age groups. It is the kindergarten playground that is across from BWXT. It makes me sick to think that we are putting our youngest kids, people that society is supposed to protect the most, at the most risk.

I know that scientific facts change. What was considered safe in my grandparents' time is not always considered safe now. Smoking and DDT are two examples of this. These things, although once widely accepted, are now universally understood to be dangerous.

We do not know enough about the long-term effects of uranium and I do not want to take any chances. I don't want to become the case study or the precautionary tale that people look back on and say, "We now know this is dangerous. How could that have been allowed back then?"

I am especially scared because I know that the problems caused by radiation sometimes don't show up for years or decades. This would make it difficult for my peers to hold BWXT accountable if we had serious health problems connected to radioactivity from uranium powder. We won't know or understand the real risks of uranium until it is too late.

Last semester I took an environmental science course and we learned about the precautionary principle that has been referenced by many intervenors. This approach means that we assume a substance is dangerous until it is thoroughly tested and proven to be risk-free. Don't process uranium powder in my neighbourhood, because

it is not 100 percent proven to be safe.

Like I said earlier, I have always felt lucky to live in my neighbourhood. I feel safe. If this licence is approved I will not feel lucky or safe to live 500 metres from a facility that makes nuclear pellets. I should be able to feel safe in my home. I want all the kids who live in my house after I leave for university to have the same privilege.

Cancer runs in my family. Because of this, my mom is a sunscreen fanatic, but somehow, thinking about sunscreen while living within a kilometre of a radioactive plant seems silly.

Stress runs in my family, too. I am scared, genuinely scared, that no matter how much sunscreen and natural products I use, my loved ones and I could get cancer from the carcinogens that will be emitted.

We know that no matter how low the risk is, uranium pelleting still poses a risk. CNSC staff have reminded us that this risk is extremely low. This does not reassure me at all, because if my mother, father or I get cancer because of the uranium in the air, to you it is still low risk, one out of 84,000. To me, my world would collapse all around me.

You have previously spoken about the erosion of trust, about the need to partner with the community. Well, the community does not want pelleting across from a schoolyard. The erosion of trust happens when you approve the licence. This is not a communication issue, this is a human health issue.

Do not approve the licence change to allow uranium pelleting in my neighbourhood. It is too great of a risk for me, for youth, for the whole community. Please make the right decision for generations to come and say no to nuclear pelleting in Peterborough.

Thank you for listening to my voice.

THE PRESIDENT: Thank you, Ms Martin, for your submission.

We will start with Dr. McKinnon.

MEMBER MCKINNON: Thank you for your very eloquent and clear presentation and submission.

We sometimes are not as clear and we use terms, especially in the area of risk which, we've talked about earlier, have different meaning. I have asked some questions about the risk procedure, but we haven't talked about the meaning of some of the words and it might be worth returning to those.

I would like to ask a question of the company. There is often in the reports use of the words "low risk", "medium" and "adequate", and so on, which are maybe perceived as being somewhat qualitative, but I know that there is an underlying very precise meaning to those. I also know that those terms, what they actually mean varies very much by the industry in which they are being used. So if you could clarify it for us and for Kaia.

What exactly do you mean by "low risk", "medium risk", in your assessments in terms of what it means to the people in the community?

MR. SNOPEK: Dave Snopek for the record.

Risk is a product of two factors. It's the likelihood of occurrence or the frequency of occurrence of a specific event and the consequences of that event happening. So when we review our operations, we do so in a hazard identification exercise where we look at those hazards and we screen them for risk. So we screen them for likelihood of occurrence and for consequence. And we do that to try and identify high-, medium- and low-risk elements for further analysis.

Where that initial exercise identifies things that are at higher risk, such as medium risk, we put

it to the next level of review, which is a more quantitative look at both the likelihood of occurrence and the consequence. Where we actually come up with frequency numbers which we look at in terms of what is the likelihood -- or what is the number of -- what is the likelihood per year of this thing happening, is it one in -- would you expect the event to happen once a year or once every 10 years or once every 10,000 years?

So there are ways to do this that the industry has developed. The chemical industry started with this with event trees and whatnot, where you can build up the frequency of occurrence of events in a quantitative way.

On the consequence side we look at material that is available in the area, how much material can be made available in the event, whether it's fire for example, and we look at things like how it's stored, is it stored in sealed drums and therefore not largely available to certain events?

But then we look at in the event that that material gets out of the facility, we actually model how it disperses in the atmosphere to determine a ground-level concentration.

So, I'm sorry, that is a little bit of a long answer, but I wanted to get across that there is a very rigorous analysis that is done for any of those risks that are screened in the initial stage where we look at high, medium and low, to look more at actual consequence and actual likelihood.

MEMBER MCKINNON: And I'm just curious, do you link that back to any of your monitoring program assessments?

MR. SNOPEK: Dave Snopek.

So for the safety analysis reports, they focus on events such as significant fires, a building collapse. So these are low-frequency events, but potentially higher consequence. So they are not linked back to the environmental monitoring that we have, which are for routine day-to-day emissions. However, we do have capability, for example under emergency conditions, to measure uranium in air, uranium in water associated with the emergency response to that event.

THE PRESIDENT: Dr. Demeter...?

MEMBER DEMETER: I just want to thank you for your presentation, but I have no further questions.

THE PRESIDENT: Dr. Berube...?

MEMBER BERUBE: Thank you for coming and sharing that with us. I just want to comment. You are an amazing orator and very convincing speaker at your age already, so congratulations. That is something to be proud of and I hope the community is proud of that, too.

At this point I have no further questions for you. Thank you.

THE PRESIDENT: Dr. Lacroix...?

MEMBER LACROIX: Thank you very much for your presentation. Very interesting.

I understand your fear of nuclear and I was wondering, have you ever toured the facility in Peterborough?

MS K. MARTIN: No, I have not.

MEMBER LACROIX: Well, I think that BWXT would be glad to welcome you, won't you?

MR. MacQUARRIE: It's John MacQuarrie.

Yes, we would be very glad to welcome you and other members of the community to tour our facilities.

MEMBER LACROIX: I would suggest that you jump on this occasion.

MS K. MARTIN: Like I said earlier, I don't think it's a lack of communication problem, it's not

me not knowing enough, it's that I feel like my voice isn't being heard.

THE PRESIDENT: Staff, let me follow up on what Dr. McKinnon asked. When you quantified the risk of the potential pelleting at this facility and said it would have no health impact, what was the quantification of the risk?

MS TADROS: Haidy Tadros, for the record. So I would like our Environmental Risk Specialist to take that question, please.

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

Not too dissimilar to how a safety analysis unfolds, Environmental Risk Assessment is somewhat similar in fashion, where the first step is what we call the screening level and so you are comparing maximum concentrations to guidelines that are protective of human health and the environment.

In this case, what BWXT approached was to do the consolidated operations emissions and those sorts of aspects and compare them to human health guidelines. We have heard mention of drinking water standards for uranium for example or air quality standards or we have had a lot

of discussion around the soil quality standards. So those are all below those levels, thus leading to the conclusions of no risk to human health.

THE PRESIDENT: So it wasn't a specific quantification then. Thank you.

So, Ms Martin, any final comments from you?

MS K. MARTIN: I want to say that I appreciate your dedication to public consultation. I see this dedication by the fact that you added a whole new day to listen to us and that you are working such long hours. I listened to the interventions few nights ago and it went so late. But consultation really is meaningless if you don't listen to what the community is actually saying in front of you.

So you say that you care about public consultation, then listen to us as we say no. Thank you.

THE PRESIDENT: Thank you again for your intervention.

--- Applause / Applaudissements

THE PRESIDENT: The next presentation is by Mr. Jim Dufresne, as outlined in CMD 20-H2.51.

Mr. Dufresne, the floor is yours.

CMD 20-H2.51

Oral presentation by Jim Dufresne

MR. DUFRESNE: Thank you. You are the President and you people have shown in the last three or four days you are doctors because the amount of patience you put up with is amazing and thank you very much for letting me speak.

Now, I will get into the good stuff.

My name is Jim Dufresne. I'm scared to think about what would happen if BWXT's licence is expanded to allow them to manufacture uranium dioxide pellets at the GE factory in Peterborough. I pray that you will not allow pelleting in Peterborough.

Pelleting would add an unacceptable level of risk to the BWXT operation. Pelleting is dangerous for the workers and for everyone living in the area within a 2-kilometre dispersion range of the uranium dioxide powder.

Uranium dioxide powder will accumulate and cause harm to the environment. Pelleting will put an entire population of 600 schoolchildren at risk.

I have been fighting all of my working

life for working conditions for the workers at GE factory on Monaghan Road. From '77 until 2004, I worked in the GE Nuclear in Building 21, the same building where BWXT is now operating. During that time I was proud to be elected by my coworkers to serve as a union steward and a chief steward later on.

During that time I personally experienced very unsafe working conditions. I worked with 175 men and women. Of those 175 GE Nuclear workers, a reported unit of 63 men and women were diagnosed with work-related cancer. Of those 63 with cancer, I was told that 44 have died. Today I have to update those numbers because three weeks ago I learned four more cancer diagnoses and one more death.

With my intervention I submitted to you a list of 63 names, now 67 names of GE Nuclear workers who got cancer. I was told that she would not be shown the names. I really wanted you to see the names. They were my coworkers, they were my friends, and I want their names to be remembered.

At one of our weekly picket against pellets we held a memorial service to honour them and their names were shared with the local press. Peterborough wants

their names to be remembered. Town of widows.

Their story has now been remembered in song. Last month, because of concerns of the potential harmful effects of pelleting, George Fogarasi -- I'm sorry about the calling -- wrote and released a protest song, "Dirty Old Town". BWXT is very quickly becoming written into the community history and not in a good way.

In 2004 I took early retirement at age 58. I was sick with multiple illnesses myself and I was also sick of hearing almost every day about another one of my coworkers getting sick and dying, some of them younger than me, sick of going to funerals.

I heard a lot of crap from GE about how they would protect us. BWXT looks and sounds exactly like GE did. I don't trust BWXT. A lot of people in town don't trust BWXT. If pelleting comes to Peterborough, how long will it be before BWXT is featured in a documentary? They are already memorialized in song.

Citizens of Peterborough and county are already suffering from rates of cancer above the provincial rate. GE workers in general and GE Nuclear workers in particular have added to local cancer statistics. These higher than average cancer rates are already known to the

CNSC as they were reported in your Environmental Protection Review Report released December 20th, 2019.

Our hospital, Peterborough Regional Health Centre, serves both the city and a large catchment area. In January 2020 of this year PRHC was listed as having the second-worst level of overcrowding known as hallway medicine in Ontario.

We have a population with a higher than average rate of cancer and a hospital that is already overcrowded. To bring the risk of another carcinogen, another uranium dioxide powder into this community would be criminal.

GE was a contaminated workplace and the site was now mostly vacated. It's still heavily contaminated with many nasty substances: PCBs, trichloroethylene, cyanide, lead, asbestos, acid. Contaminants have been leaking out of that site for a long time.

For many years the employee parking lot on the west side of Monaghan Road was gravel. Several times each summer GE sprayed it with PCB-contaminated oil to keep down the dust. Testing found PCBs 15 feet down. As partial remediation, GE removed the top five feet of soil.

This was a high-risk job. The workers that were doing the work wore full hazmat suits. However, every time it rains the rainwater comes down the slope, through the contaminated parking lot, across Monaghan Road and into the storm sewers. BWXT seems to be indifferent to this hazard and hosted a community barbecue on the contaminated parking lot.

BWXT denies there is a pathway of contaminants to enter the groundwater system, despite the presence of known man-made drainage systems straight into Little Lake.

More crap. When GE was built five drain lines were installed to carry stormwater from the GE site directly into Little Lake and it is well known that contaminants from GE have been leaking into Little Lake for many years.

This summer a plume of PCB-contaminated industrial oil appeared in Little Lake. The hazmat crew said that it was a fire retardant. You don't use PCB oil to put out a fire. The hazmat suit crew said it was a fire retardant.

Boaters on the Trent Severn waterway stop at Peterborough Marina. Swimming, fishing and camping are

permitted in and around Little Lake. Contaminants have already made the drainage system straight into Little Lake.

In my written submission I told you there was a serious accident in the tack and braze area while I was working there. A new employee was being trained on how to operate the brazier. Suddenly there was an explosion and beryllium was ejected into the room. An alarm went off. It took two days to clean up the area. Later there were multiple worker deaths attributable to beryllium.

One of the GE widows insisted that an autopsy be performed on her husband. He had cancer and beryllium in his brain. A woman who had done the laundry for the workers in the tack and braze area, she died of cancer. I know three others who died of brain cancer. I recently talked to a GE Nuclear employee who has berylliosis, a rare and fatal disease.

In my written submission dated the 24th of January 2020, I told you about the rumour circulating in Peterborough: Beryllium had been found in a clean room and in the lab at BWXT. About the same time a professor at Trent University discovered data on the CNSC website reporting that beryllium levels in the soil at eight test sites around the city increased significantly between 2018

and 2019. The highest levels of beryllium are at the Prince of Wales School.

BWXT denies all responsibility for the beryllium that is accumulating around the city. It took many years before we realized that GE was a dangerous workplace. Where did the beryllium come from? It wasn't aliens.

BWXT wants to bring pelleting to Peterborough. The Monaghan Road site already has a dangerously high toxic burden. Pelleting will add to that toxic burden.

Their 2019 renewal documents clearly state that the levels of uranium dioxide emissions will increase substantially if pellets are manufactured in Peterborough. These uranium dioxide emissions will put 600 children directly in harm's way.

Now, BWXT denies the rising levels of beryllium found at the Prince of Wales schoolyard came from their factory across the street. There are no other known sources of airborne beryllium in Peterborough that I know of. Something is very wrong at the BWXT factory. Please don't make things worse. No pelleting in Peterborough.

Thank you very much.

And I still have a little bit of time. I brought a lot of information with me.

Now, these are people that worked in the nuclear and they believed GE when they said, "We are looking after your safety." These people are all dead. Ted, you should know some of them, you were our foreman.

There is the number of funerals I have been to since I retired in 2004. I have done 15 or 16 eulogies at these funerals.

Here's a little booklet I started about three years ago. This booklet has been up to Queen's Park, it has been to WSIB and it has been to a lot of offices. There is -- out of 175 people there's 64 people's names and now it's 67 that worked in the nuclear that got cancer. The ones in pink are already dead. There are still a few of us limping around that are left.

This one here, there's over 500 names of people who worked at General Electric that died of cancer -- 500 names.

I haven't got these ones on yet in the last maybe two months because the board is full and I have to get another one.

There's 25 years of GE history right here

and a lot of it isn't pretty. Now, that's 25 years of GE history, this is only a year since I have been involved with this group on BWXT. All the information is in there.

The other group I belong to is an advisory group on General Electric. We have been involved in that for 25 years. It's not an easy job to beat WSIB. There are 73 families that have a claim that have already been turned down and denied. And like Dan said yesterday, that's not an easy job.

Our group put a letter -- or put thing in the paper yesterday and I am as proud of this as I am of being in the "Town of Widows" movie. I suggest to you people, if you get a chance, watch it, because I don't think there will be a dry eye around the table.

I can't believe I done it all in 10 minutes.

--- Laughter / Rires

THE PRESIDENT: Well, thank you very much for your presentation, Mr. Dufresne.

Dr. Demeter...?

MEMBER DEMETER: Thank you very much for your presentation and your passion for this issue.

A number of intervenors have raised the

issue of legacy issues and health issues with the former uses and former tenants of the building.

So my question to BWXT is: What do you do to assess for legacy issues and legacy potential harmful agents for your current employees in this building that has a long history and, based on a number of interventions, a lot of potential hazards? What do you do to assess for those hazards and make sure that the people who work for you are in a safe environment?

MR. SNOPEK: Dave Snopek, for the record.

On an annual basis -- first of all, we occupy buildings on the site. We occupy four distinct buildings, which is a small subset of the overall site and the overall number of buildings on the site.

On an annual basis, the landlord actually conducts a survey of designated substances within the facility. I think I mentioned that yesterday or the day before, that they look at things like asbestos. So in as much as asbestos remains within the facility as insulation on pipes, there's an inventory taken of that. And the annual survey is to review the condition of asbestos, for example, on pipes. And if it's found to be in a degraded condition, remediation is taken place. Either it's removed

or it's repaired.

But in addition to asbestos within building materials, the survey looks at lead, mercury, other potential hazards within the building to ensure that those are understood, well controlled, and at safe levels.

MEMBER DEMETER: And is that survey available to the union steward? Does CNSC get that survey?

MR. SNOPEK: Dave Snopek.

I'd have to check to see what the distribution is on that survey.

MEMBER DEMETER: Given the amount of angst about historical and legacy issues in these, it would be really important to understand, given that the perception that the landlord is sort of monitoring themselves for all these potential hazards and then giving a report to you as an employer, it'd be really interesting to understand if that report is disseminated more broadly to the people that are directly impacted by working there.

And does CNSC, do you get a copy of that from a conventional health and safety point of view?

DR. DUCROS: Caroline Ducros, for the record.

We don't get a report. We don't get a

copy of that report from a conventional health and safety point of view. It's within our inspections, but we don't see that report.

MEMBER DEMETER: Okay, that's very interesting.

THE PRESIDENT: And BWXT, as far as your employee base, I suspect many of them are former GE employees who may have been exposed to all these chemicals and toxic materials. Do you do any special health screening or assessments for them?

MR. SNOPEK: Dave Snopek.

We have a medical program for our nuclear energy workers and for our beryllium workers, and our medical program focuses on those aspects. Our program also looks at things like fitness for duty, so fitness to wear a respirator for those jobs that require a respirator, fitness to operate machinery, that sort of thing. And that might be kind of where there might be some link to that.

But we don't survey for kind of non-BWXT workplace exposures.

THE PRESIDENT: Thank you.

Dr. Berube?

MEMBER BERUBE: Well, first of all, thank

you for your presentation. Stark, to say the least. And
...

MR. DUFRESNE: Did I not push the button
on?

MEMBER BERUBE: No, you were fine. Yeah.
So my question is to CNSC. Looking at
this situation and looking at the history of the site, and
it's been regulated for quite a while by CNSC before, prior
with GE operations and stuff like this, how much
longitudinal data do you have on beryllium and uranium
concentrations on the site? There must be some history
some place. Do you actually analyze that before you look
at the licensing? Or -- because right now we have a
problem with context, you know, what's been there before
and where's it going. And I'm sure you must have some of
that data someplace.

MS TADROS: Haidy Tadros, for the record.
I believe we looked at the baseline and Ms
Karine Glenn in Ottawa had mentioned that with the
preliminary decommissioning plan, with regards to how do we
establish what is BWXT and what is GE, had talked to the
details about the baseline that is looked at, so that
anything going forward since the transfer to BWXT, it is

under their licence, it is under their requirements.

So perhaps Ms. Karine Glenn can give us a description of that.

MS GLENN: Karine Glenn, for the record. I'm the director of the Waste and Decommissioning Division.

Just to add to that, yes, absolutely, they have to characterize all the contaminants on site. And they have done a lot of that. Work studies in 1995 were performed, prior to BWXT taking over, as well as studies in 2008 to determine what contaminants were on the site and the extent of the contamination.

BWXT is responsible for cleanup of the area that they occupy and for the contaminants that they generated. But I believe, and we can verify with BWXT, that they stated earlier this week that they were responsible for all the uranium and beryllium cleanup that is on the area that they occupied as part of their licence site. The remainder of the site is the responsibility of the landlord, and that's GE.

MEMBER BERUBE: Well, thank you for that, but I can tell you, your body doesn't care who made the pollution, it just cares that it's there. So when we're looking at this, we need to understand what's there

historically, what the contributing factors of the current operator are, and whether or not that's at some risk to the public.

And I understand that the licence only deals with BWXT's contribution to that scenario, but they could have a platform that doesn't emit anything; if the historical loads are still clinging around, that doesn't change the situation.

MS TADROS: Haidy Tadros, for the record.

So perhaps what might help here is if there is a CNSC licence issued -- for example, GE, which was in place at the time -- GE was responsible for all of the beryllium, all of the uranium, all of the legacy waste issues that were associated with its work as per the licence from the regulator at the time.

With the transfer, that transfer, now that it's BWXT, includes all of the legacy, all of the materials that BWXT would be looking at.

So I guess what I'm trying to summarize is from a regulatory licensing perspective, one, we would not have let the land go to anyone if there was radioactive or hazardous material associated with the regulated activity. So there is in our regulatory framework a cleanup that

needs to happen, an end state report that needs to be provided. This is final cleanup, which is going to be the case with a detailed decommissioning plan once BWXT completes their operations.

So from a licensing perspective, contaminants that are currently under their licence, for them to be released from regulatory control, we need proof that there is no longer any contaminants there.

In this case, there has been a transfer of that legacy to the current company, BWXT. I completely understand your perspective in terms of this is not about who owns what; it's about the contaminants are there, who's doing something about it. And what I'm trying to describe is under the regulatory framework, we look to ensuring that nothing gets released from regulatory control until a full cleanup happens according to our current regulatory framework.

MEMBER BERUBE: So I guess my question, and this is to BWXT, you're well aware that you've assumed the risks for the site as part of your leasehold agreement; is that correct?

MR. MacQUARRIE: It's John MacQuarrie, for the record.

So yes. So want to make it clear that regardless of GE's operations or ours, I believe that we fully understand all of the hazards in our work environment to our workers and to what is being released. And between ourselves and GE, who have halted operations on the site, right. We're the only industrial operation on the site other than some office activity that GE has going on. I think we do have that characterized and understood.

And so I know that from our perspective, we know what our workers are exposed to. We know that there may be contaminants in the ground around our facilities, but we're not -- there's careful controls on not disturbing those soils. So we know that we're not, you know, creating new hazards for our employees.

So I don't want to leave you with the impression that there's some confusion here between ourselves and GE. I think we feel like we've got everything well characterized and understand the impact to our employees and to others.

MEMBER BERUBE: The only difference is -- I just want to make it very clear -- that you know liability and impact are two different things. So we're talking about biological impact versus legal liability and

responsibility. These are two very different things; right?

MR. MacQUARRIE: I'm not talking about liability.

MEMBER BERUBE: Yeah, okay.

MR. MacQUARRIE: I'm sorry if I gave you that impression. I'm talking about impact.

MEMBER BERUBE: Okay.

THE PRESIDENT: Dr. Lacroix?

MEMBER LACROIX: I just want to thank Mr. Dufresne for his passionate and genuine presentation. Thank you.

THE PRESIDENT: Dr. McKinnon?

MR. DUFRESNE: Thank you, sir.

MEMBER MCKINNON: There's nothing like personal observations which bring value to the questions that we ask.

One of the things you mentioned was the drain lines. So my question to BWXT: In your site characterization, these five drain lines would be known or would they be part of the property that you are renting?

MR. SNOPEK: Dave Snopek, for the record. I believe there are references to the

stormwater management on the overall site. That is the responsibility of GE, the landlord. Again, we occupy the four buildings on the site. The overall responsibility for plant infrastructure is with the landlord.

We've talked a little bit about surface water, surface water management and emissions, and we -- based on the emissions from the facility, we don't impact stormwater. We don't have emissions that have the potential to lead to contamination on surfaces, for example, outside the plant and be entrained in stormwater. Yeah.

MEMBER MCKINNON: I guess the bigger question was, you know, thinking of potential pathways for any contaminants in your area into, you know, the external environment, you know, with it being an old site, has there been sufficient characterization or site investigation to ensure that there are no other sort of old legacy infrastructure that could be considered a pathway?

MR. SNOPEK: Dave Snopek, for the record. There's no credible pathway for uranium and beryllium to stormwater.

MEMBER MCKINNON: And the other question I had with regard to the beryllium room incident which was

mentioned, and it made me think of the conversation we had yesterday about the time frequency of the emissions monitoring, particularly the air monitoring.

So you collect samples in the stack through a filter system. And you would send those to the lab once a week. So that's one weekly response that you would get. But if something happens, you know, in the very short term like an accident that could release something that could be then ventilated, you mentioned that there are certain interlocks or shutdown features.

But what other aspects -- is there anything else you could do in the very short term in terms of monitoring that would be shorter than the one week related to the actual operations to prevent that type of release -- you know, very, very short term?

MR. SNOPEK: Dave Snopek, for the record.

There's a number of things that we can do. We talked about the environmental monitoring being on a weekly basis. If there was an event, we can actually take that filter out immediately or after the event and then send it to the lab, even though it might be for two or three or four days, and get that expedited through the lab. So we would be able to quantify that much more quickly if

we had a specific event.

We also can set up workplace air monitoring within the facility. We're often doing that as a matter of course. We're often doing personal air monitoring on the lapel of workers. So we've got air monitoring that may be available at the time, but if there's not, we can certainly put it in place within the workspace very quickly.

THE PRESIDENT: So following up on the incident or the accident of the 1980s, where there was a brazier that exploded in the beryllium room, is that something that you have -- I hope -- you have assessed and learned from and ensure that something like that doesn't happen? Can you comment on that? Then we'll talk about the other incident that's mentioned later in the --

MR. SNOPEK: Dave Snopek, for the record.

We looked -- based on the intervention, the written intervention, we looked back through the records to attempt to identify the event that was discussed. We believe we've identified the issue in 1983. It doesn't quite match the description that's in the intervention. So maybe --

Like the only thing that gets close to

this is an event in the brazier operation where there was -- brazier operation used to be in bell jars. And there was a work stoppage associated with some visible beryllium that was scraped off the edge of the bell jar. I can talk to that, if that was the event. But it certainly was not an explosion event. Ministry of Labour was involved. Air monitoring was conducted by ourselves and the MOL and found to not be above TLV levels.

That's the only event that we can find that's close to this description, but it was not an explosion.

THE PRESIDENT: Mr. Dufresne, do you want to comment on that?

MR. DUFRESNE: Yeah, it was afternoon shift. We were training a new man on the braziers. There was two sets of braziers in there then. I was on this one, the new guy was here. My back was to them. I heard a bang. The top of the brazier come off. The alarm went off, and the beryllium was coming out.

I took I think it was 33 or 34 people, we all left the room and went down the aisle, outside on the lawn. Security guard phone the manager, who lived in Westwood. He showed up about an hour later. We'd

contacted the Ministry of Labour.

The manager told us to get back to work. I said, "We're not going back to work; the alarm went off. There's beryllium all over the place." He says, "Go back to work or you're fired." I said, "You can't fire us."

He suspended us for half of that -- the rest of our shift and the next day was a Friday. We put a grievance in; we won our grievance.

It took them two days to clean that room up. And right across the aisle was the clean room. I don't know whether it's still there or not. One of the guys in there was telling me that he said it's the first time in history they had Speedier and Ann Cruikshank in. Usually one's in for two years, then the other one's in for two years. They had both them crews in there for two days. They scrubbed the ceilings, they scrubbed the walls, they scrubbed the floor. He said they done it all two or three times.

Craig McDowall, who passed away because he committed suicide a little while ago, was telling me at the time, he said, "Jim," he says, "I got some information for you." And I said, "What is it?" He says, "They done the whole thing." He's, "We've done a 12-hour shift, two

guys." He said, "They didn't do the top of the braziers."

So I asked the man from the Ministry of Environment, "Could we go in there and just look at something?" He says, "Why?" I said, "It's because I got something to show you." And he got really upset, because I asked him to do that.

But he finally -- we put our lab coats on. I said, "Let me borrow one of your white gloves." He says, "Why?" I said, "I'll show you." He give me his glove. I reached up to the top of the brazier and I went like this. And I opened up my hand in front of him and I says, "Get back." He said, "Why?" So I took two steps back and I went (blows into mic). And there's hundred of little wee tiny pieces of white things floating around in the air.

I said, "Whether you know it or not," I said, "that's beryllium. It'll kill you. That's why the alarm went off. And you wanted me to bring all these people back in here."

It's good they got an alarm system, but it should be backed up.

THE PRESIDENT: Mr. Dufresne, were you wearing protective clothing, equipment? Did you have a personal air sampler that we hear is what's required today?

MR. DUFRESNE: In the tack and braze area where we were, and the beryllium room's beside it, we had a lab coat and cloth gloves. The same as in the loading room. We had a lab coat and cloth gloves.

And in 1988 or '89, I went from 198 pounds down to 161 in about maybe five weeks or six weeks. I went and seen the company doctor. Company doctor said, "Well, Jim, you look good. You know, as long as you feel good, don't worry about it." I said, "Doctor, in five months, I'm going to disappear."

I seen my own doctor. She sent me to a specialist. My urine sample come back about two weeks later.

I put a grievance in because I wanted out of the loading room. My foreman at the time told me, he said, "It cost us a lot of money to train you. You're staying there." I said, "You got a verbal agreement now, I'll have a written one tomorrow." So they took me out of the loading room.

They took Benny Pugwater(ph) and Bobby McGee in to replace me in the loading room. They both died of cancer.

THE PRESIDENT: CNSC staff, do we have any

record of this accident?

MS TADROS: Haidy Tadros, for the record.

So I was just asking our colleagues here, and no, we don't have any records of this. We might need to go back into the archives if at the time AECB was there.

I just would like to add for the record, it's quite frankly deplorable at this point what has happened and what did happen. Similar to the conversation we had around Port Hope, these kinds of decisions, these kinds of regulatory oversight that is needed is in place now.

We have requirements on safety culture. We have requirements on cleanliness. We have requirements on emissions, on worker safety, on whistle blowing. That was not there in the 1980s. These are mechanisms that are current to today and work today, as we've heard potentially from others.

So I do recognize that a lot of wrong has happened. And through our regulatory history, we've corrected a lot of that, and that is why we are here before you recommending the kinds of programs that we've assessed go forward.

THE PRESIDENT: So then moving on to the

next page, Mr. Dufresne, you mentioned about recent rumours circulating that the beryllium room was found -- that beryllium was found in the clean room.

Maybe I'll start with BWXT. Is there any truth to that? Where could this have been coming from?

MR. SNOPEK: Dave Snopek, for the record.

Our primary beryllium room is our B3 room, which is negative pressure, about 30 air changes per hour with full ventilation.

The larger work area where we work with beryllium is our B2 area, and we conduct air monitoring in that work area. Typically we're around one tenth of the -- of airborne limits, very low airborne beryllium in that area.

But over time, beryllium does settle on surfaces. So we rely on our cleaning process, our housekeeping process. There is potential that on areas that are inaccessible to cleaning, such as at height, that over long periods of time beryllium does build up on those areas. So we recognize that, and we clean those areas. So we've done cleaning on those areas.

We used to do cleaning routinely. We've resumed cleaning routinely, because we realize that surface

contamination is an indicator of poor housekeeping. So we are cleaning those areas to make sure that over long periods of time that beryllium doesn't build up even in spaces that are not accessible for routine cleaning.

THE PRESIDENT: So how often do you clean?

MR. SNOPEK: Dave Snopek, for the record.

We clean areas -- we used to do this routinely. We have resumed doing it routinely --

THE PRESIDENT: Yeah, but what does "routinely" mean; once a week, once a month, every day?

MR. SNOPEK: Dave Snopek, for the record.

We clean continuously in the workplace. We have janitorial staff that cleans both R2 and B3 areas as well as the general plant, so we clean continuously.

As part of that cleaning, we also clean at height now, which we hadn't done in the past and we've resumed doing.

MR. AMALRAJ: Julian Amalraj, for the record.

I'd like to add something in terms of staff's role in terms of enforcement as well as inspections associated with the beryllium events and contamination.

So we have reported a beryllium --

significant beryllium event in our -- through an event incident report earlier to the Commission. Staff conducted a reactive inspection associated with that.

We specifically interviewed the two workers who were impacted. Some of the conversations had to do with the workers' ability to refuse work, the right to refuse work in terms of hazardous conditions, as well as the visual aids and the training aspects of their fairness towards safety and personal safety aspects, their obligations as well as the management systems and the system that is supposed to ensure their safety aspects of it.

During inspections, we also reviewed the contamination swipe sampling that the licensee regularly does and we ensure that they're executed to what the program's requirement are.

On top of that, CNSC also conducts its own verification swipes. And probably there's a picture on one of the slides where I've climbed up on an area that was unreachable to -- we make sure that we challenge our licensees on those aspects to ensure that the overall cleanliness of the plant for these specific types of hazards.

It's very, very heartbreaking to hear that stories from the eighties but, as such, that kind of situation would not arise today.

And we report these things in our regulatory oversight report for the Commission so there is a public setting in terms of -- as well as awareness of what is going on in the plant and what are the things that have happened.

THE PRESIDENT: Mr. Dufresne, there are many BWXT workers that live in Peterborough. Have you spoken to them and what have been their experiences? Do they express concerns to you about their workplace safety?

MR. DUFRESNE: I spent -- I started in there at 16 years old, I left at 58. And I used to say I made a lot of friends in there. I made some enemies, but I made more friends than enemies, so I think I won.

When I left there, I wasn't real up to par health-wise and -- but you meet a lot of people. You talk to people. And I left work early.

I still had a lot of people I knew in there, and people talk. And I was told -- I don't want to mention any names. I was told that they had a problem in there with the filters, the beryllium filters. Then I was

told that they had -- I don't know whether it was a leak or a flood or what, but in the 20-some years I was there, the clean room was like you could go in there and I used to tease them and say if I needed surgery done, I want it done on the floor of the clean room.

I was told it was beryllium in the clean room and in the lab, and that never happened in the 20-some years I was in the nuclear.

I will say I watched part of the videos at Evinrude Centre. I got into a bit of a tiff at the barbecue. I was upset. And it looks like you have made a lot of improvements, and I hope you have.

But the nuclear industry has been really hard on a lot of people, especially the technicians.

I don't -- I'll mention names if I'm allowed to, but the nuclear industry sent three of our best guys, a technician, another technician was his kind of senior, and an engineer. When they sold the reactors to Argentina, they were having all kinds of problems.

The nuclear sent our three guys down there. They were gone maybe a month and a half, two months. And I don't know what the safety things are down there. I guess they weren't too good. All three of these

men died of cancer within a year and a half.

Frank English was 40 years old. He had a family.

Kenny Sang was one of the nicest gentlemen I ever met in my life. He was an engineer. He was the smartest man I ever met in my life. For him to die like that -- if you watch people dying with cancer, I've been to hospitals, I've been to palliative care. It's not pretty.

This thing's got to be stopped.

And the sad part is, children across the road. Now, I've tried to talk to Mrs. Salvatore, but she don't want to talk so we do it through the paper.

And for the Minister of Health who's responsible for the City of Peterborough makes a statement like the beryllium over in the schoolyard is within threshold limits, there shouldn't be threshold limits for beryllium in a schoolyard, for God's sakes. They're kids.

Little kids, women are hit first, and then occupational diseases.

There shouldn't be beryllium in that schoolyard, and why the hell hasn't it been cleaned out of there? It's really frustrating.

I'm sorry I'm upset, but.

THE PRESIDENT: No, Mr. Dufresne. We totally understand your frustration.

Anything else you want to add?

MR. DUFRESNE: One little comment, and I may get into trouble here.

I got a Grade 8 education because at 16 I started working in the factory on a boys' job, but I'm having a hard time understanding. It's AEC and now it's CNSC, and you got BWXT. Don't any of these people have names?

But I'm trying to figure it out, who controls what, and it's hard. And then you talk to a man like Dan that was here today and spoke, and that's a disgrace what that man went through.

But then, as I'm getting further into this -- I don't have a computer. I do now, but I didn't have one a week ago.

I find right in the middle of all this is CNSC Lavalin. Now, aren't these the people that just got fined \$280 million for fraud and corruption?

There's something wrong here.

THE PRESIDENT: SNC Lavalin, not CNSC.

MR. DUFRESNE: Well, like I said, I only

got a Grade 8 education.

THE PRESIDENT: It is an alphabet soup. I hear you on that.

MR. DUFRESNE: But there's something wrong.

And I don't know, maybe I'm a little strange, but in a factory and the way I've lived was if you run with dogs, you're going to get fleas.

There's something wrong with the system.

THE PRESIDENT: Thank you very much for your submission. Thank you.

MR. DUFRESNE: Thank you for the opportunity. I appreciate it. And thanks for having patience.

THE PRESIDENT: Okay. Our next presentation is by the Organization of Canadian Nuclear Industries as outlined in CMD 20-H2.36 and 2.36A. Dr. Ron Oberth will be making the submission.

Dr. Oberth, the floor is yours.

CMD 20-H2.36/20-H2.36A

Oral presentation by the

Organization of Canadian Nuclear Industries

DR. OBERTH: Thank you, Ms Velshi.

I just want to start with an opening comment that I'd spent more than 40 years in science and engineering and technology, and I've come to trust science and I trust the people that are on that panel and I trust the people at BWXT and GE that I've worked with for most of my career, so I come at this from a very different point of view.

I just flew in from London last night on a plane that was half empty because of fears of Coronavirus and many people wearing masks, so that was a scary situation.

But what I did learn in London was the enormous respect that the nuclear industry around the world and in -- particularly in the UK has for the Canadian regulatory environment for companies like BWXT who are on this trade mission, and so I'm very proud to be part of this industry and I think we have risen to very, very high standards and are doing a lot to protect the environment.

My organization represents 250 companies that are part of this industry that are all highly-skilled workers, men and women that have invested their lives and careers in doing what's right for society and what's right for the environment, so I'm very proud of their achievements, 20,000 people, all working in various aspects of the industry and contribution to what we think is a very clean environment.

In fact, I was reminded when I was in the UK that the emissions from the Ontario electricity system are one-tenth -- greenhouse gas emissions, one-tenth of those in Germany. We should be very proud of what this industry is doing to fight climate change, which is a huge risk affecting all of us on this planet.

I worked with GE and BWXT for many, many years, and just by the numbers, the two organizations have been in business for 50 years providing CANDU reactor fuel and reactor components both for domestic and offshore customers.

GE and BWXT have been members of my association for 35 years. In my tenure of almost nine years as head of the organization, I have brought delegations from around the world and from various

governments in Canada to visit BWXT Peterborough.

It's a plant that we're very proud of, and each one of those visits I'm left with a sense of the strong standards that are operated within that facility.

BWXT has served on my Board for 10 years and the releases at or above regulatory limits from this facility are zero. So those are the numbers of BWXT.

Environmental and social and governance factors are very important now in how society judges corporations, how institutional investors judge corporations. We are operating at a standard which is very, very high these days, and I'm proud to say that BWXT in the area of ESG is highly recognized and highly admired.

Quality assurance procedures from John MacQuarrie right down to the people on the shop floor are strongly enforced and adhered to, and it goes up and down the entire organization. It continues for -- striving for improvement.

Employee training is ongoing and it's very important that every employee be rigorously and repeatedly trained on safety procedures.

So I see BWXT Peterborough and Toronto as really a nexus of quality, safety and environment, and have

been a big part of this community for 60 years.

I looked at the data that was presented, and I'm happy to just reconfirm -- I know that you've gone over this in the past, but in 2018 the limits of the releases are well, well below regulatory limits, less than one percent for uranium in water, also less than one percent for uranium emissions in air.

Beryllium in Peterborough is even at less than .01 percent and .04 percent of limits for water and air. And I think these are exemplary performance standards.

BWXT undertook a very rigorous environmental risk assessment. That ERA is conducted under very rigorous standards set by the Canadian Standards Association, CSA.

It was undertaken to determine whether there would be any negative environmental effects from current or future emissions associated with producing pellets at BWXT's Peterborough facility, and the overall conclusion of that ERA estimated emissions from consolidated pellet production would be -- the risk would be determined to be very, very low.

BWXT is a strong member of the community.

They communicate regularly with their public through newsletters.

Their employees contribute to local charity events, regular plant tours. And I would encourage the people that we heard earlier to take advantage of those plant tours.

The Toronto facility has had a community liaison committee since 2013, and I understand Peterborough is forming one in 2003. And it's great to see what BWXT does in terms of its "Volunteer Strong" program.

So in summary, I want to say that BWXT NEC has been an integral part of a very successful Canadian nuclear industry for more than 50 years. Ontario is a leading jurisdiction around the world in its battle to limit greenhouse gas emissions and set a standard for other countries to follow.

And we are also a leading jurisdiction in producing life-saving medical isotopes that have saved the lives of hundreds of thousands of people around the world. And those isotopes are being produced at plants, Pickering, Darlington and Bruce, that are fueled by fuel made here in Peterborough.

I believe that BWXT has demonstrated

excellent environmental, social and governance principles throughout its 60-year history. And around in the world, in my travels, I realize that BWXT, and have seen it firsthand, is certainly one of the leading suppliers of nuclear fuel and reactor components and nuclear inspection systems.

So I strongly support and my association strongly supports BWXT's application to renew its Class IB fuel facility operating licences at Peterborough and Toronto, and including the flexibility to produce pellets at both the Toronto and Peterborough facilities. And I trust that the people at the CNSC and the dedication and adherence to science principles are making a sound decision on this matter.

Thank you.

THE PRESIDENT: Thank you, Dr. Oberth.

Dr. Berube.

MEMBER BERUBE: Well, thank you for taking the time to come and speak to us.

It's important to have everybody's view on this, and certainly a lot of the points you've made with regard to emissions in terms of carbon emissions are very true. There's no doubt about that. So it's something that

all Ontario should be proud of, I think, on a global basis.

That being said, there's really nothing in your presentation that I have to question. I just thank you for your time.

THE PRESIDENT: Dr. Lacroix.

MEMBER LACROIX: I just want to thank Dr. Oberth for his intervention. We appreciate it.

THE PRESIDENT: Dr. McKinnon.

Dr. Demeter.

Dr. Oberth, any final remarks?

DR. OBERTH: I do know it's been a long five days, and I hope my positive intervention will have some results that are positive for my good colleagues and respected colleagues at BWXT.

THE PRESIDENT: Thank you very much for your submission and appearing today.

We're just waiting for our next intervenor.

Our next presentation is by Ms Julie Cosgrove as outlined in CMD 20-H2.87.

Ms Cosgrove, the floor is yours.

CMD 20-H2.87

Oral presentation by Julie Cosgrove

MS COSGROVE: Good morning, and thank you, Madam President Velshi and Commissioners. My name is Julie Cosgrove. I have lived in Peterborough for 20 years, and all these years within a few blocks of the current BWXT location.

I work in the not-for-profit sector. My son attended Prince of Wales elementary school until 2017.

I'm grateful to the Commission for being here and taking this time to listen to our community, for the hundreds of unpaid hours contributed by community researchers and educators on this issue on top of full-time jobs, parenting and caregiving responsibilities, to the Michi Saagi Anishnaabeg and all First Nations for their tireless work as stewards of this land which benefits us all, and to everyone who has participated today in these hearings.

I'll begin by sharing that if it had not been for CARN, Citizens Against Radioactive Neighbourhoods, I would not have learned about BWXT's proposed licence renewal application despite the proximity of my home to the

plant, which is true for others in our community.

The fact that a BWXT open house brought out only a handful of folks, mostly BWXT staff and -- mostly BWXT staff and that CARN volunteers were able to fundraise both the expenses and had the ability to engage 248 people in what turned into a three-hour information night with standing room only to discuss BWXT's licence application strongly points to what can be viewed as one example of BWXT's strategically lackluster public engagement program and general lack of transparency, which are running themes, I think, throughout this hearing.

BWXT's ERA rests on the assumption of perfect operational performance, but there is no such thing as perfect in the nuclear or any other industry, and low risk is not no risk.

I come from a working-class family. My father worked for 40 years in an open pit mine until he was crushed by rock into an early retirement. My birth mother worked with General Electric for 41 years, exposed to 40 known plus carcinogens on a daily basis. She died in 2006 from exposure-related cancers working in a government and CNSC oversight industry. Which is all to say that accidents happen, mistakes are made and that we have cause

to be wary.

If BWXT and the CNSC were truly applying precautionary principle asserted, we wouldn't be here today because there would be no question of conducting uranium dioxide pelleting in a populated downtown city neighbourhood with an estimated eight schools, 12,000 properties, 25,000 residents and several seniors' homes all within two kilometres.

I also understand precautionary principle as essentially recognizing that not we, nor science, have all the answers, that western science is one knowledge system that is a constantly-evolving body of work, and also dependent on whose interests and/or funding fuel that research and occasionally the results that are found.

We've heard challenges this week as to who decides which science is being used here. We humans make mistakes despite our professional training, despite extensive policies and procedures, and despite our good intentions because that is our nature.

We've heard about the 44 men and women who worked in building 21 of GE Hitachi while operating under the CNSC and who died of work-related cancers and others who are still sick and unsupported.

Our neighbours in Port Hope who have been devastated by Cameco's toxic legacy while operating under the CNSC, which included exposing workers to uranium emissions at 200 times the legal dose for civilians, widespread contamination and a divided community.

In 2012, Shield Source Peterborough was found in violation of safety regulations regarding tritium while operating under the CNSC.

In 2019, in Portsmouth, Ohio, BWXT is named in a lawsuit involving Sands Corner Middle School closed suddenly in May after enriched uranium was detected within the school itself roughly two miles from the plant and with resulting childhood cancers associated with this event.

And with respect to BWXT Nuclear Canada, the CNSC Staff report, pages 47 and 48, cites details of no less than 22 events between 2012 and 2019 at the BWXT Peterborough and Toronto plants.

So between 2016 and 2018, for example -- and I won't go through all the detail. It's in the report. There were accidents related to security, radiation action level exceedance, the hydrogen fire at the plant, issue with fire sprinkler equipment, environmental releases. In

2018 the emergency activation regarding like a large rain event and resulted in loss of power and flooding.

So I have a few questions. And I recognize that probably many of these have been answered over the course of the hearings. I haven't been able to follow as much as I would like to. I have another job that I get paid to do.

So I understand there's a huge hydrogen tank at the Toronto facility. If BWXT produces pellets in Peterborough, will there be a hydrogen tank on site here and, if yes, how will it be labelled?

In the event of a major fire, how is the neighbourhood protected? BWXT's reads, and I quote:

"Internal radiation exposure control for major fires in areas where uranium pellets are exposed in the manufacturing area the potential for significant releases of airborne radioactivity is possible.

Therefore, emergency responders reporting to such areas should wear respiratory protection."

So does this mean that school children and

others in the neighbourhood will be provided with like respiratory masks and drills?

Aside from leakage from the dual safety release valve, what other ways can a storage tank's pipes be compromised? For example, can a leak happen because of direct impact or puncture from corrosion?

Exactly what environmental testing has 100 percent confirmed that our local watershed won't be compromised with the projected increase of 94,000 times more uranium release into the sewers and that others downstream, such as Hiawatha First Nation, for example, wouldn't be impacted, including traditional food sources?

On BWXT's website it claims at the Peterborough facility, and I quote, air monitoring results are hundreds of thousands of times below the CNSC licensed release limit. Like how is that even possible?

What this suggests to me is that the CNSC really has no idea what a safe limit is and that the limits are established for industry convenience of reporting and not to meet zero risk for human and environmental health.

When asked, CNSC staff did not have information about the cost of uranium remediation across the country, the province or even Port Hope specifically,

nor were they able to confirm if contaminated soil is currently being dumped along the 401 highway, which is a rumour that we've heard.

How can the CNSC approve remediation costs in a licence application without knowing the real costs of the work?

How can the precautionary principle be applied to this application with respect to extreme weather events due to climate chaos, which the Report Canada Our Changing Climate states to be the new norm, when we really don't know how this is going to unfold over the next ten years? We can speculate about extreme weather, flooding, storms, but we really don't know what is coming.

In this time of increased anxiety and unpredictability permitting dioxide pelleting on a decrepit industrial site surrounding by thousands of people who already carry a toxic burden seems like high stakes at best and morally reprehensible at worst.

I will close with these questions.

Dear Commission, are you willing to risk on our behalf that there will be no human error, no mistakes made in any way by BWXT staff or the CNSC that can jeopardize the health of this community and future

generations?

And if you do approve this application to include uranium dioxide pelleting, can you promise us, the citizens of Peterborough and everyone downstream and downwind from this plant, that there will be no consequences in the short or long-term health of our community and environment? And if you do and if there is, who will be held accountable?

Please do not approve BWXT's licence application to expand operations to include uranium dioxide pelleting in Peterborough.

Thank you.

THE PRESIDENT: Thank you, Ms Cosgrove.

Dr. Lacroix.

MEMBER LACROIX: Thank you very much, Madam Cosgrove, for your intervention. You have raised a number of issues that have already been dealt with during the last four days concerning the hydrogen tank, the precautionary principle, the location of the facility and the possible releases of pollutants into the environment. So I'm going to pick on one of the interesting points that you raised in your written submission. I found it quite original and I will redirect your question or your concern

to staff.

Staff, I'm going to ask you a very simple question. I would like an answer in plain English, please, and in a nutshell. The question comes from Madam Cosgrove and her question was: In the context of the *Nuclear Safety and Control Act*, what constitutes an unreasonable risk?

MR. RINKER: Mike Rinker, for the record.

I would say in general there are two instances that would constitute an unreasonable risk, two classes of instances.

One of them is if there were a worker or public or environmental exposure that was causing an impact to health and safety. I think if you have crossed that line and you are causing that sort of impact, you don't have a margin of safety there for sure.

The second is even if you haven't crossed that line and you are not causing an impact but the operator is not controlling their facility well, they are causing releases, they are creating pollution, despite the fact that there would be low thresholds, but they are not controlling it appropriately, they are not mitigating, that is also unreasonable.

THE PRESIDENT: Dr. McKinnon.

MEMBER MCKINNON: Thank you for your intervention. And don't feel bad about bringing up the same points that may have already been addressed. It adds weight to them and it often prompts us to think of them in a new way. So it's always welcome.

One thing that you brought up which was new actually was about the drinking water. I think based on some comments earlier in the week we heard that there was no impact on the groundwater so that was not being sampled. But I'm not sure where Peterborough gets its drinking water from, whether it's groundwater or any other surface water.

So I'm wondering if CNSC staff could just discuss that and to confirm that no matter what the source of the water there is actually negligible impact.

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

I will sort of summarize what is in the environmental risk assessment and conclusions that CNSC has drawn on it, and then the nature of the drinking water system in Peterborough I would ask someone perhaps to complement that.

The manner in which the aquatic releases

was looked at in the case of this facility, it was looked at in a few ways. I think if we go back to the Lake Ontario Waterkeepers' intervention in Toronto they highlighted three potential pathways.

You have just mentioned one, the groundwater, storm water and then the sewer.

We have talked a little bit about groundwater. Through the conceptual site model there is no evidence or indication that that is a pathway.

They looked at the storm water aspect and looked at both the normal operations as well as the consolidated operations where they took the maximum annual releases of uranium beryllium, looked at it, dumped it into the storm water for lack of a better term, and said okay, what are we looking at? And there were values far below guidelines protective of human health and aquatic.

When we come to the sewer contribution they looked at -- and recognizing again those are going to a surface waterbody. It could be used for drinking water but nonetheless that's the kind of standard they would be looking at.

So in this case they looked at the maximum allowable concentration for uranium, which is a drinking

water base standard, and that was the comparator that they used, looking at their contributions to the sewer. And it was orders of magnitude below that when factoring in different factors.

MS SAUVE: Kiza Sauv , for the record.

So the drinking water in Peterborough comes from the Ontonabee River and the Ministry of Environment, Conservation and Parks also has three surface water monitoring stations in Peterborough. So they do those tests as well.

Then the drinking water facility is also inspected by the Ministry of Environment, Conservation and Parks and also has some third party testing that is done on their drinking water as well.

MEMBER MCKINNON: And they would test all the potential contaminants that could come from the plant?

MS SAUVE: Kiza Sauv , for the record.

The uranium is not listed on the drinking water utility's website as one of the contaminants that is tested, so I can't confirm that. But I can look into -- the Ministry of Environment, Conservation and Parks does their tests in their surface water sampling, and they do test for uranium and beryllium in those samples.

THE PRESIDENT: Dr. Demeter.

MEMBER DEMETER: Thank you for your intervention. I have no further questions.

THE PRESIDENT: I would like to follow up on some of the comments made by the intervenor around siting and criteria.

From the intervention it seems like you have had the runaround, whether it's from the MPR first, the Municipality, CNSC staff, on who really has the authority on where nuclear facilities should be sited or if there are any proposed amendments to processes.

Can you give me staff's perspective on that, please?

MS TADROS: Haidy Tadros, for the record.

The ultimate authority of where a nuclear facility will be sited is the Commission. They issue a licence.

Before that there are criteria in place for when a proposal comes forward looking at a potential nuclear facility and what that siting criteria would be.

For that, I would like to ask our colleagues in Ottawa that look at the environmental assessment and the impact of the project on the environment

and vice versa.

So over to you, Ottawa, please.

MS CIANCI: Candida Cianci, for the record. I am the Director of the Environmental Assessment Division.

As Ms Tadros indicated, upon receipt of any licence application that has the potential to have interactions with the environment, it is the responsibility of our division to look at what environmental review would be applicable for that licence application, taken in accordance with the regulatory framework.

So we will make that determination based on looking at the legislation that is in place at that time and determine what type of environmental review is required, either an environmental assessment, as Ms Tadros indicated, or if it's not subject to a federal EA we would look at doing what we have done in this particular case is an environmental protection review because we still have the mandate to look at the protection of the environment.

When it comes to the environmental assessment, it looks at the entire lifecycle of the project. So it will look at the different components that have to be looked at in terms of the siting and it will

take into account environmental characterization of the surrounding environment and also take into account public input and Indigenous group input.

MR. AMALRAJ: Julian Amalraj, for the record.

Just to add to what my colleague just said, for this particular application the request was for a renewal of an operating licence and the requirements are based out of the Class 1 Nuclear Facilities Licence, Section 3.

We confirmed, based on the submissions from the licensee, that they are compliant with that through the lease agreement that was submitted. It is clearly stated in that that the lease and the operations are subject to the *Ontario Planning Act* associated with the zoning part, and they have a continuing requirement to maintain that.

THE PRESIDENT: As far as potentially adding a pelleting process, how does the current zoning requirements address that?

MR. AMALRAJ: Julian Amalraj, for the record.

It does not affect that. The pelleting is

industrial processing of uranium dioxide. The current plant is also processing uranium dioxide.

The hazards associated with the operations come with the safety and control measures associated with those operations to ensure safety neutrality.

Essentially from a zoning point of view there is no additional requirement.

THE PRESIDENT: I'm sorry, I think I may have missed one of the dots as you were trying to connect them for me.

The current facility does not have pelleting. If pelleting is being considered, how does the current zoning address that?

You are saying that because it is an industrial process it is already addressed?

MR. AMALRAJ: It is an industrial process and it processes the same material and the safety case is still the same. So there is no change in terms of what the facility is currently doing, from a zoning requirement point of view.

THE PRESIDENT: Would the safety case be the same if the two facilities, the Pickering and Toronto, were under separate licences?

Let me just elaborate on that.

If pelleting was being brought here, as you have submitted yourself, the emissions are much higher of uranium at the Toronto facility than they are here at the Peterborough facility. So would the safety case still remain unchanged?

MS TADROS: Haidy Tadros, for the record.

So the safety case that is put before you, which includes the pelleting operations to come to Peterborough, is the safety case that is currently in place based on the one licence that BWXT currently has.

What CNSC staff will be doing through the licence conditions and the hold points through those licence conditions is to verify that the reports submitted will meet the requirements according to the safety case that is being proposed and is currently in place.

THE PRESIDENT: But my question was: Had Peterborough had a separate licence and now we are thinking of introducing pelleting, would the safety case have been the same for that facility?

MS DUCROS: Caroline Ducros, for the record.

I just want to outline that the safety

case has two aspects to it. There is the safety analysis aspect and also the environmental protection aspect.

So for this application the assumption that the CNSC took was that we ignored the timing or the flexibility and we assumed that the pelleting would happen in full in Peterborough. There are no changes to the production amount, so we looked at the consolidations.

There was an environmental risk assessment that overlaid both the operations in Toronto to the operations in Peterborough, and we looked at the safety analyses for the operations on the safety analysis side that are currently approved in Toronto and those in Peterborough, and we analyzed that under the context that it would all take place in Peterborough.

So we looked at what we call the bounding envelope that it would all occur. And the safety case, as Ms Tadros was saying, when the modifications are made to Peterborough that is when we will require those licence conditions to verify.

So in Peterborough right now they don't have the same environmental monitoring program, for instance, as they do in Toronto. That would have to be put in place.

And if there were separate licences we would look at the safety analysis that is in place in Toronto, that is currently in place and approved and in Peterborough, and we have looked at the risks in each.

I will pass it to Mr. Julian Amalraj because he seems eager.

MR. AMALRAJ: Julian Amalraj, for the record.

I will try and explain this from a safety assessment point of view. Bear with me a little bit on this.

The existing plant if it brings a new hazard or new equipment into the plant -- and I will use an example to describe the concept.

If you bring a hammer into the plant, that introduces a hazard. But you expect the corresponding hard hat, steel-toed boots and training for the personnel for that. And that would be considered safety neutral.

The same way if you are bringing in a grinding operation or a sintering operation, there are handling systems, fire sprinklers and associated safety and control measures as a unit that would ensure safety neutrality.

When they are implemented within the plant, if the difference in depth have failed, that is how we analyze events or accident scenarios in there. The building is rated for handling a certain amount of uranium, and currently the Peterborough is rated in terms of say 60 skids. They process around five. And the remaining 55 skids are essentially storage of uranium powder.

When they bring these new machines in there the five that is being processed at a time might become ten, but they would compensate by storing less uranium. So at any given time it will still be the same uranium.

And that uranium is what is used in terms of failure analysis to show how much uranium will be released out of the plant. So the uranium in all worst case scenarios and the safety aspects of it does not change.

The processing aspect might change, the amount of uranium present or processed at the same time might change, but the total quantity of uranium never changes.

And that is how we define the overall safety case and accident scenarios.

If you need additional on the normal operation side of using the ERA, I can explain.

THE PRESIDENT: No, that's fine. That provided great clarity. Thank you.

And then there was some reference made to a two-kilometre buffer zone for continual testing of air and soil quality.

Where would that two-kilometre buffer zone concept have come from?

MS TADROS: Haidy Tadros, for the record.

We were looking at that as well. I believe in a separate intervention the concept of two kilometres came in when the IEMP sampling was undertaken. I believe the reference was the IEMP sampling was taken in a two-kilometre diameter around the plant.

I will ask our environmental protection specialist to confirm that assumption.

MS SAUVE: Kiza Sauvé, for the record.

That is our understanding as well. At different facilities we sample out to five, ten. At the Bruce facility, for example, we sampled out to 150 kilometres to respond to an Indigenous community.

In no way does that mean that it is a

150-kilometre buffer zone there.

We did a little deeper digging into the uranium in drinking water. I went through the site a little bit more and the city does test for uranium in drinking water in Peterborough. And there have been no exceedances.

THE PRESIDENT: Ms Cosgrove, please confirm that what you call a two-kilometre buffer zone is because that's what the IEMP sampling saw. Thank you.

Any final comments from you, please.

MS COSGROVE: I guess I would like to share that I'm not leaving here feeling, you know, that all my questions have been answered or that I feel really good about what I'm hearing. It doesn't escape my attention that CNSC staff depend on a robust nuclear industry for their livelihood.

I would also like to just recommend the Commission to really take a look at sort of that process too that the community experienced. There has been a burden placed on the community with respect to the short time that folks were given to respond. So BWXT provides a licence application and within a day the CNSC staff are responding five days before Christmas before our City

Council is going into a month of budget meetings.

Like this whole process has been a bit disingenuous from my perspective.

I would like to share before I leave, because I'm a voracious reader and I've really appreciated also sort of the openness of the Commission. It wasn't what I was expecting.

One of the books that I'm reading right now that I am loving, and apparently it is on the New York Times best seller list, is Braiding Sweetgrass by Robin Wall Kimmerer. So if you haven't read it, it will bring you joy and I think also open up possibilities for new ways of thinking about this work and how we live in a reciprocal relationship and yes, coming from a place of love.

THE PRESIDENT: I, too, highly recommend the book. Thank you for sharing that and thank you for coming today.

MS COSGROVE: Thank you.

THE PRESIDENT: Our next presentation is by Ms Corinne Mintz, as outlined in CMD 20-H2.61 and 2.61A.

Ms Mintz, the floor is yours.

CMD 20-H2.61/20-H2.61A

Oral presentation by Corinne Mintz

MS MINTZ: I will do my best here. It's not my favourite thing but I will do my best.

Good morning. I am a resident of Peterborough, a business owner and a parent. I am a health care practitioner and have spent the last 30 years of my life making decisions that ensure good quality of life and good quality of health for myself, my children and my clients.

Like Deirdre McGahern, who we heard from on Wednesday night, who has put great effort into creating a non-toxic living space, I too make decisions every day that help me to live the most healthy and vital life possible. I grow my own organic food in my urban food garden here in Peterborough. I consume local and organic foods. I drink filtered water, get good exercise and I take care of my mental health, except for now when I'm in front of all these people.

When I found out approximately one year ago that BWXT NEC was applying for a licence renewal and planning to change its operations here in Peterborough to

include uranium dioxide pelleting, I was very concerned. Now after researching the process of making uranium pellets and the possible health, environmental, economic and social --

THE SECRETARY: Excuse me, Ms Mintz. Just go a bit slower, please. The interpreters have difficulty following.

MS MINTZ: I will try.

THE SECRETARY: If you need an extra minute to fit it all in, we will manage.

MS MINTZ: Okay. Now, after researching the process of making uranium pellets and the possible health environmental economic and social repercussions, I am even more concerned. I am advocating for the BWXT licences of Toronto and Peterborough to be restored to separate licences. The combined licences take into account the BWXT facilities in both locations but not the surrounding communities and their differing circumstances and needs.

As we have heard, Peterborough struggles with a legacy of contamination from the GE site that reaches far and wide. The people of Peterborough are already dealing with a heavy toxic burden. I do not

believe that BWXT or the CNSC can know if adding insoluble uranium dioxide to our surroundings will be the straw that breaks the camel's back.

As well, BWXT Peterborough's location is unique as so many intervenors have mentioned, in a residential neighbourhood very near to a school. In this hearing again and again I hear the Commissioners hoping that if they can only explain CNSC procedure properly, if they can only explain BWXT's operations clearly, if they can only get us to understand that there are no possible health concerns related to safe levels of beryllium and uranium that the public will feel happy and safe with BWXT operating and possibly making pellets in our midst.

I am sorry, unfortunately, it is not that I do not understand your science or your procedure, it is that I believe the same resources that Phil Kienholz has quoted to us, to you.

I agree with Dr. Edwards, Faye More, and Dr. Vakil that uranium dioxide is harmful and potentially carcinogenic even in small quantities once inside the body.

As well, I cannot be convinced of the safety of BWXT's present and future operations.

The public has been assured that nuclear

companies like BWXT and its Canadian regulator the CNSC makes sure that everything is perfectly safe for the public. When individuals or a group raise concerns they are told that their fears are unscientific and unfounded. We are continually assured that everything will always go smoothly and that company's operations are below safe limits, therefore, there is no chance of harm. I truly wish that were the case.

Unfortunately, as Janine Carter reminded us, the history of the nuclear industry tells the truth. We have example after example worldwide that the nuclear industry is not safe and that the public and the environment are not safe from the harmful effects of this industry. Uranium mining, the production of fuel pellets and fuel rods and the resulting radioactive waste that is produced by the nuclear industry all pose significant risk to human health.

Examples like Chernobyl, Fukushima, and the contamination of Port Hope and Elliot Lake, the local history with Shield Source and GE, just to name a few. So the regulators cannot keep the public safe from the harmful effects of the nuclear industry.

As Faye More told us in detail yesterday,

Port hope has experienced accidents, spills, leaks, and houses and properties that are contaminated with radioactive materials. I have had the opportunity to speak with residents of Port Hope, and the stories they relate regarding exposure of themselves and their families to radiation and the subsequent health issues they have had to endure are truly horrific. As we heard yesterday, it is the public that is paying for this cleanup.

Many people have raised their concerns about rising levels of beryllium at Price of Wales School and though this is concerning in itself, I think it is even more so concerning because it raises the more important question that if pelleting is given the okay for BWXT Peterborough, will we next see rising levels of uranium dioxide?

I have recently read articles concerning Pike County Residents in Ohio, USA. They have filed a class action that I believe involves BWXT. This class action is concerning radiation contamination in Zahn's Corner Middle School in Piketon.

If you only answer one or two of the questions in my intervention today, please answer me this: BWXT, is it true that you're implicated in Ohio in

contaminating a school?

The second very important question for me to have answered today is this, as BWXT has mentioned, their market for pellets is forecast to be cut in half with the closure of the Pickering facility. It is my worry that the next step for BWXT pellet production will be to make pellets for the new, small, modular reactors. These pellets will not be natural uranium, they will be enriched uranium and there will no public consultation for this change of production.

Will we, as well, be told that enriched uranium poses no significant health concerns? BWXT, is it at all possible that if you start producing pellets in Peterborough that they could at some point be made of enriched uranium?

I have another important goal here today, and that concerns Citizens Against Radioactive Neighbourhoods. Citizens Against Radioactive Neighbourhoods has circulated a petition expressing our concerns about the possibility of a pelleting facility being located in our city. I will read out the wording of the petition for the Commission. Good neighbours don't make radioactive pellets.

"To: The Canadian Nuclear Safety
Commission:

BWXT has announced it is seeking a ten-year renewal to their existing licence but have requested a change -a change that would allow them to process uranium dioxide powder into pellets in Peterborough for the first time.

Specifically, they are asking Canada's nuclear safety regulator, the Canadian Nuclear Safety Commission, (CNSC), to grant them a licence change which would allow them to conduct uranium pelleting operations at its Peterborough facility, in addition to fuel bundle assembly and the repair of contaminated equipment under the terms of its current license.

IN CONSIDERATION OF THE
FOLLOWING FACTS:

1. For the very first time,

BWXT-Peterborough would be able to process large amounts of very fine uranium powder that can be easily inhaled, ingested, or absorbed into the body through a cut or abrasion.

2. Significantly increased amounts of uranium dust would be released from the plant in the form of fugitive airborne dust emissions as well as liquid effluent.

3. Children are especially vulnerable. Uranium is a very long-lived radioactive heavy metal that poses both a chemical hazard and a radiological hazard when inhaled, ingested or absorbed. The BWXT plant in Peterborough is just metres from the junior playground of a public school.

4. The city of Peterborough is

already exposed to legacy waste associated with industrial activity on this site.

5. No federal environmental assessment applies to this project and therefore no consideration of the need or purpose of the proposed activity, alternative means or socio-economic and sustainability factors will be reviewed by the CNSC.

THEREFORE, WE AS THE UNDERSIGNED CITIZENS CONCERNED ABOUT THE IMPACTS OF THE PROPOSED CHANGE ON OUR HEALTH, COMMUNITY AND ENVIRONMENT, REQUEST THAT THE CNSC DENY BWXT'S LICENCE REQUEST TO PRODUCE URANIUM DIOXIDE FUEL PELLETS IN PETERBOROUGH AS PART OF ITS 10-YEAR LICENSE RENEWAL."

So, this is just the handwritten signatures that we received.

We received 1342 digital signatures on our

petition, and 847 signatures on CARN's hand-signed petitions, that is 2189 signatures in total. This represents a significant portion of Peterborough's 81,000 citizens who have taken the time to sign their names and express that they do not want BWXT to have the flexibility to start pelleting here in Peterborough.

It is also very important to mention that there have been weekly demonstrations held outside of both BWXT and City Hall. These demonstrations began with just a handful of people and have grown each week. On January 18th, CARN's demonstration had 81 attendees in a horrible snowstorm. Here are a few slides of these demonstrations and the concerns the demonstrators are conveying.

Okay, so it is ongoing pickets in Peterborough by citizens concerned about the possibility of pelleting at BWXT.

--- Video presentation / Presentation vidéo

MS MINTZ: And that's it.

Finally, in closing, I would like to ask the Commission to, for just one moment, as you're asking concerned Peterborough citizens to do, for just one moment think as I am thinking. Imagine that you know from all the data you have read that uranium dioxide, once inside the

body, is a potential carcinogen.

Imagine that your research shows that children and women are likely to develop those cancers.

Imagine, again, that you know from your research that the nuclear industry is prone to human error, unforeseen circumstances and accidents.

And, lastly, remember that scientific knowledge changes with time. Asbestos was not understood to be harmful in the past. X-rays were not understood to have harmful side effects. How will you view uranium even ten years from now? And, thus, you will understand why I cannot be convinced that BWXT's operations are safe, and you will understand why I will not live in a community with a pelleting facility, and why I'm requesting from the Commission that the Commission deny BWXT's request to produce uranium dioxide pellets in Peterborough.

That the Toronto pelleting facility be moved to a location far away from residences and schools to ensure that the public will truly be safe.

That BWXT be denied a ten-year licence of operation in Peterborough, and that the Toronto and Peterborough licences be restored to separate licences for separate facilities in separate communities.

And BWXT, I am asking you to remove your request to begin making pellets here in Peterborough from your licence renewal.

THE PRESIDENT: Thank you very much, Ms Mintz.

Dr. Demeter -- I'm sorry, Dr. McKinnon?

MEMBER MCKINNON: Thank you. There's no doubt from your petition and the photographs of the picketing that this licensing has really galvanized the whole community. However, I have no additional questions.

Thank you.

THE PRESIDENT: Dr. Demeter?

MEMBER DEMETER: Thank you for your presentation.

I'm still trying to get my head around the Licence Condition 15.1 and 15.2 as proposed, and the safety analysis. So maybe I'll get it from this way: Has BWXT presented to CNSC a detailed siting and layout guide that tells you specifically where the pelleting process is going to be located in the building; how it will be vented; and, where the hydrogen tank is going to be relative to proximity? Has that level of detail been provided to you? Or, are you just using all the factors related to how

they're operating in Toronto and making assumptions that that's the way it is going to be in Peterborough?

MS TADROS: Haidy Tadros, for the record.

So the short answer to that is, it's the latter. We are looking at all of the parameters that are currently in Toronto and using that within the current safety case for Peterborough. However, coming back to your questions on the licence condition, this is where the commissioning report -- all that level of detail will be in the commissioning report. That is --

MEMBER DEMETER: Okay, the commissioning report 15.2, doesn't say if they'll be operating -- it doesn't say prior to operating; it just says that you will expect the commissioning report. Does that come -- that comes before they operate, or after they operate?

MR. AMALRAJ: Julian Amalraj, for the record.

So the information required for safety assessment of pelleting at Peterborough was provided by the licensee as to what they will, how they will do it, and where they will do it.

Now, the question in terms of the layout part of it as to - and I explained that earlier, the

equipment and the operations come in sub-operations that have their own safety and control measures, and there's units essentially that are safety neutral when they come into a particular plant.

The licensee has to meet the code standards and the design requirements which are extremely prescribed, both by international guidance and national codes and standards and the fire codes. They will not install this in the plant without having to go through the code, standards, and all this stuff. So, there is nothing additional in terms of detail that I would have to assess that would look into the safety aspects of what the licensee will do.

What the condition does is that we ensure that the information is provided back to CNSC so we have the latest information up-to-date, so we can confirm that what they have committed to in their application in terms of the information submitted is what they have implemented, and it is an exercise in confirming that that is what they have done, and the safety operating limits that currently is in front of the Commission to approve, will be what they have implemented.

So the conditions will confirm what the

safety case is that we're approving. But we are not assessing anything down the road.

MEMBER DEMETER: Okay, thank you.

DR. DUCROS: Caroline Ducros, for the record.

I would like to add though, because you asked about when that would happen. They cannot begin pelleting before the CNSC receives the commissioning report and approves it.

MEMBER DEMETER: Just really, from an optics point of view, I have no confidence that -- I'd like to know, 'We're going to put the hydrogen tank here, the blast radius is here.' I mean I know they often meet all these standards, but if I'm going to open a plant I want to get all my ducks in a row before I open the plant so that I am sure that I'm going to be able to open my plant, and I'm not going to know that until you know all these details. You're not going to let them operate until you know all these details, and these details are all hypothetical-based on Toronto's performance right now.

MR. AMALRAJ: Julian Amalraj, for the record.

Absolutely true. We would have loved to

have had that information, but that is not what the requirement is. Under the regulations they're supposed to provide us with the information that will allow us to assess safety. When the plant meets NFB-55 Standards for cryogenic tanks, and has the TSSA certification, the site and the locations are protected and they would not be allowed to do anything other than that. And they would have to submit that information confirming that they have done that before we would allow them to operate, period.

MR. JAMMAL: Ramzi Jammal, for the record.

Let me walk you through the process of -- of -- as you said, there is a design element which is based on the safety case, with binding elements.

It doesn't matter what the facility is. So, we go through a progression from the design to the commissioning. The commissioning means testing, and the commissioning can be done via, for example, if we take nuclear power plants, they go through refurbishment then they -- before they go through the fuel load they go at what we call a commissioning, so it could be called commissioning, hot commissioning.

The same thing is being applied here with respect to here's the design of the facility. They have

equipment to install. Then they will do the commissioning for the testing so that the equipment will perform according to the standards.

They cannot do any of the processing of uranium, which I'm going to call the hot operation, because it will contain micro substances, till we review the commissioning report. So, there is no leaks, there are no potential failures in any of the interlocks; that's what commissioning means.

Then the staff will review the details of the commissioning and then evaluate. Most likely they will go do a site inspection. This is all prior to the operation, but everything is done based on a bounding element of this licensing basis and the safety case that's approved by the Commission. If it fails, it's a no go. So, in other words, there will no pelleting allowed on that site.

So, this is how our regulatory structure is put in place. It doesn't matter even if it's a particle accelerator for radiation therapy. You install it, you test it, you commission it so that it's going to give the same output it was designed to, and then they go into the operation for the treatments.

THE PRESIDENT: Dr. Berube?

MEMBER BERUBE: Well, thank you for your submission. And it sounds like we're ignoring you at this point because we're tied up with something else.

MS MINTZ: I have two really important questions that I really do need answered today.

THE PRESIDENT: We will get to you at the end, yes.

MS MINTZ: Well, I would like an opportunity before it's my closing statement, okay. Thank you very much.

THE PRESIDENT: Yes, but we haven't finished with the questions ourselves yet.

MS MINTZ: Okay. Thank you so much.

MEMBER BERUBE: So I have to ask you this question and it's a very sincere question so please take your time to answer it sincerely as much as you can.

I hear, in your presentation that trust is eroded in the community to the point that the only acceptable answer for a lot of people is zero risk because there's zero trust; is that correct?

MS MINTZ: I think that's very accurate, and I would add to that, that really we're not going to

stop being concerned.

MEMBER BERUBE: Right.

MS MINTZ: And BWXT needs to keep that in mind with their operations here. This is not the right location, as Deirdre mentioned. It is not the right location for their existing facility and it is certainly not the right location for the future pelleting choices.

MEMBER BERUBE: That being said, I can tell you, and I'm looking around the room, what we're talking about this entire time is about risk. There's no if, and's, buts, or maybes. So, the only way you can zero risk is if you do nothing.

MS MINTZ: It's not about doing nothing, it's about choosing an appropriate location with a buffer zone or in a wilderness area where there are not people close-by.

MEMBER BERUBE: Yeah.

MS MINTZ: This is a very specific situation.

MEMBER BERUBE: M'hmm.

MS MINTZ: We are -- we all -- many of us live across the street, you know.

MEMBER BERUBE: M'hmm.

MS. MINTZ: It's not like we're talking about a concept; it's our homes.

MEMBER BERUBE: So, I'm just going to explain very quickly, because I think some people have missed it, because we've had a lot of intervenors talking pretty much the same language, different ways of expressing that, right?

MS MINTZ: M'hmm.

MEMBER BERUBE: So these people are about risk management; that's what they do. They have a process, they're trying to manage the risks, they're trying to produce a product and so their whole life is basically about getting it out the door, making a profit at and managing that risk.

MS MINTZ: M'hmm.

MEMBER BERUBE: This group over here is all about risk assessment, you know, how -- how dangerous is it? Is it going to hurt people? You know, can it blow up? All these kinds of things. They spend their whole life doing this and they are very good at it.

Our job up here is to judge risk, you know, what's reasonable? Because, I'm going to tell you, from my personal standpoint, everything I do has a risk to

it; I can get up in the morning, going to the bathroom and having a shower, there's a risk to it because, you know, I could wipe out in the tub and that's game over.

So the issue is, what's reasonable and what is not reasonable. Now, what I'm hearing from the community is that zero risk is reasonable.

MS MINTZ: We have been exposed to unreasonable risk for a long, long time, here.

MEMBER BERUBE: M'hmm.

MS MINTZ: And many other communities have, as well, and so what's reasonable -- if I was told that BWXT was going to move to a safe location with a proper buffer zone around it, I would say that is reasonable risk. There's still risk with their facility because BWXT works with some of the most toxic materials known to humans.

MEMBER BERUBE: M'hmm.

MS MINTZ: So it is risky business, unfortunately, in its inherent nature. I hear that you are doing your best, your incredible best. But, as I read more and more, there is always human error. And we will just become another statistic on that list. And that's fine to read about in a journal, but it is not fine for the

individuals who have to experience it.

MEMBER BERUBE: Right.

MS MINTZ: Yeah.

MEMBER BERUBE: Well, I want to thank you for sharing that, and your deep-seated beliefs on it and the reasons why you believe that what you're telling us is true. And I'd like to thank all the rest of the intervenors on that, too. It's really important for us to understand where you're coming from on it, and why you're presenting these arguments, how that's come about being. So that's really all I have to ask you at this point.

Thank you.

MS MINTZ: Thank you. Thank you very much.

THE PRESIDENT: Dr. Lacroix.

MEMBER LACROIX: I just want to thank you for your intervention and for sharing with us your concerns.

THE PRESIDENT: BWXT, we haven't asked you this, even though many intervenors have raised this, this is about the Ohio lawsuit and the radioactive contamination of the school. Can you share with us what the implication or possible application of that may be to your situation

here in Peterborough?

MR. MacQUARRIE: It's John MacQuarrie, for the record.

So that situation involves a United States government-owned facility that for some period of time BWXT had a joint venture operating that facility for the government. Those operations are entirely different than what we do here. In fact, to get much information about those, you need to be security cleared by the United States government which we, as Canadians, are not, and so don't have much information about that.

But what I can say is, that that's a separate entity, unrelated to us. No common management. No common systems. No common product. It's just a different enterprise altogether.

THE PRESIDENT: So when you say no common product, are you saying that the risks, the emissions, the health impact would not be similar to what may be happening here if pelleting were brought here?

MR. MacQUARRIE: Yes, that's what I'm saying; that's my understanding.

THE PRESIDENT: Thank you.

Well, over to you, Ms Mintz, your

questions?

MS MINTZ: There's one more question.

There is one more question that is of great importance to me because as we're speaking about this, we're not thinking to the future. We're not taking that one step farther. And, as far as I see, the next step for BWXT, and I am certainly not a great expert, I want to be clear about that -- the next step would be enriched uranium, making your enriched uranium pellets here in Peterborough.

As far as I understand, enriched uranium pellets involve -- it's even more toxic. It's even more risk to human health. And as far as I understand, there will be no consultation with -- with the public before that were to occur once pelleting of natural uranium begins here; that it is a very easy and simple transition to go to enriched uranium.

THE PRESIDENT: So we did have that question answered in Toronto, perhaps.

MS MINTZ: Oh, okay.

THE PRESIDENT: And it was their licence does not allow them to handle enriched uranium.

MS MINTZ: So what would be the procedure?

Like, what would happen? How would the public be informed? Would we have a chance to come here and talk to you again?

THE PRESIDENT: A good question. We'll as staff to answer that.

MS TADROS: Haidy Tadros, for the record. So I'll give a same but slightly different, based on lessons learned. So the procedure is that once we get an application we will be in the community, as the regulator, engaging with the community, ensuring that the community knows about the application proceeding. So in this case, that November 2018 date, that's where we would be.

And it would go through a very similar and robust technical assessment given that the current proposal does not include enriched uranium in its safety analysis, in its safety case, in any of the licensing considerations that we're looking at. So there will be multiple steps throughout the licensing process should this go through from a technical perspective where the public will be requested their opinions, their thoughts, their voice.

And, similarly, we will be here in front of the Commission once staff is confident that the information meets the regulatory requirements.

THE PRESIDENT: Thank you.

MS MINTZ: So that sounds very informal for -- I mean, I don't want to get into the particular about enriched uranium because, unfortunately, I really don't know them clearly enough, but I do know that enriched uranium poses even more of a health risk to humans.

THE PRESIDENT: But I think it's premature to even have this discussion. I think what you have heard is, their current licence does not allow it.

If they were to ask for that, the public would be greatly involved right from the outset.

MS MINTZ: But they haven't been successful. Like, we were --

THE PRESIDENT: But this is a hypothetical situation so you -- all I'm saying is, you don't need -- we don't need to worry about it now; it's not in their current licence; it's not in the application in front of us.

MS MINTZ: Unfortunately, I -- I do worry about it and I do think it is a legitimate concern, but I do hear what you're saying.

THE PRESIDENT: Okay. Any final comments?

MS MINTZ: I do have some final comments.

THE PRESIDENT: Okay, now is your time.

Thirty seconds, though, please.

MS MINTZ: Okay. It's short. It's short.

BWXT, doing more and better monitoring is the least we can expect from you. But the reality is, it will not make me feel safer.

You are a company working with highly toxic materials; you need to move your facility to a truly safe location with a buffer zone around you and away from people.

As a person who has devoted her life to health and wellbeing, I will not raise my children and grow food in a community that has uranium dioxide particulate added to the air. I will have to move away from the community that I love. I will have to leave my fifteen-year-old food garden with mature apple trees, peach trees and grapevines. I will have to move my children from a school that they enjoy. And, I will have to move my business at a great financial loss to myself.

Commissioners, you get to make this decision. BWXT, you get to enjoy the profits. But it is me and my family that will have to live with your decision.

THE PRESIDENT: Thank you for your intervention.

Ms Martin, sorry, I think we're going to take a break now and we will resume at 11:00 o'clock. Thank you.

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

Suspension à 10 h 39

--- Upon resuming at 11:00 a.m. /

Reprise à 11 h 00

THE PRESIDENT: Well, welcome back.

The next presentation is by Ms Erica Martin, as outlined in CMD 20-H2.66 and 66A.

Ms Martin, the floor is yours.

CMD 20-H2.66/20-H2.66A

Oral presentation by Erica Martin

MS E. MARTIN: Thank you for giving me the chance to speak to you today on this very important issue. Because the CNSC responded to our interventions on February 24th, almost a month after the deadline for us to submit our interventions, I have decided not to use the visual portion of my presentation so that I can instead answer and

debunk some of CNSC's assertions.

My name is Erica Martin. For the past 12 years I have lived in the residential neighbourhood where BWXT operates. My home is 583 metres away from this plant. I feel compelled to speak today because my community is at risk. BWXT should not be allowed to produce uranium pellets in Peterborough.

Consider the location. CNSC staff's supplementary submission stated that the Peterborough facility is "located in an industrial zone". That is from slide number 8. The photos in their presentations make it look like BWXT is in an industrially zoned area. Please listen carefully: the BWXT factory is not in an industrial area, it is in a residential area with one antiquated industrial site.

CNSC have also said that BWXT is in compliance with zoning regulations, but these regulations are centuries out of date. The original factory in this location was built in 1892. That's 128 years ago. What was okay in 1892 is not okay today.

In 1892 child labour was normal. In 1892 women were not allowed to vote. We have obviously learned something since then. In 2020, now that we are more aware

of the effects of toxic emissions on human health, industrial facilities are no longer allowed to be built in residential neighbourhoods.

Does the CNSC really believe that zoning from 1892 supports the needs of communities in 2020?

The CNSC staff say that they have modernized safety regulations. Why then should we accept antiquated zoning? You can't pick and choose which regulations to modernize in order to suit your business plan.

Would the CNSC allow a new nuclear facility to be built next to an elementary school in a residential neighbourhood?

Yesterday during the hearing Julian Amalraj from the CNSC responded to a question by saying that siting requirements for Class I nuclear facilities are different for existing facility renewal than they would be for new sites. Is this true? If so, it is illogical. If something is unsafe for a new site, by definition it is also unsafe for an existing site.

I would like to follow up on a question from Ms Velshi. CNSC staff have said they can't address zoning issues because these issues are a municipal concern,

but the Peterborough City Council says it's the CNSC which is responsible for nuclear siting. Our neighbourhood is caught in the middle of this irrational catch-22 where no one is willing to take responsibility. I am asking you the Commission to stand up and address this quagmire by not allowing an industrial facility in a residential neighbourhood.

As many intervenors have noted, the factory is also located 25 metres away from Prince of Wales. This is the elementary school where my children went for 10 years. Just for comparison, the distance from the front doors of this Holiday Inn to the Tim Hortons across the street is 28 metres. That's how close it is.

The 25-metre distance from a school is critical because radiation exposure is much riskier for children than it is for adults. This is because in proportion to their weight, children breathe more air, consume more food and drink more water than adults do.

We also know that toddlers love playing in the dirt and putting things into their mouths. This means that children are exposed in different ways and in different amounts from adults.

We also know that children's nervous,

immune, reproductive and digestive systems are still developing. At certain stages of development, exposure to environmental toxins such as radiation can lead to irreversible damage.

And last, because of their youth, children have decades for the damaging and long-lasting effects of radiation to take hold.

This information is from the World Health Organization.

As the CNSC's supplementary submission states:

"For a given radiation dose, children are generally more at risk of tumour induction than adults."

Many Prince of Wales students spend 10 years at the school, which puts them at risk of radiation exposure for most of their childhood. We have a collective obligation to protect our children from these risks by saying no to BWXT's proposed licence change.

Radiation exposure from uranium pelleting is not a potential risk, it is a real and serious risk. In CNSC's supplementary submission they list accidents that have happened in their Toronto and Peterborough plants in

2013, 2014, 2015, 2016, 2017, 2018 and 2019. These events were documented by the CNSC. There is no guarantee that other accidents will not happen. This is not a potential risk, this is real children being put in harm's way.

As well, when you read BWXT's own reports, you will note that significantly more uranium has been released through the air from their Toronto plant where pelleting is currently being done than from the Peterborough Plant where it is not being done. It follows that if BWXT is allowed to produce nuclear pellets in Peterborough, much greater quantities of uranium dust will be released into the air. These radioactive emissions are very likely to fall on the playground across the street where toddlers are playing.

As Michael Rinker from the CNSC staff said on Wednesday at these hearings, we should "expect uranium to fall tens of metres from the facility", in other words, onto the playground. This is not fair to our children. We do not want to have this elevated level of emissions in Peterborough in a residential neighbourhood and across the street from an elementary school.

I would also like to talk about the approach to safety taken by the CNSC.

The standard of ALARA, or as low as reasonably achievable, is not by definition protective of human health. It holds organizations to the standard that they are able to achieve, which is a particularly circular example of doublespeak. Instead, the CNSC should be advocating for the use of the precautionary principle, which means that we should go out of our way to protect human health because the consequences are so great if we do not. This principle has been adopted into law by the Supreme Court of Canada.

In addition to the powerful examples given today by Jim Dufresne, here is another example. When asked about the deadly contamination from radioactive materials in Port Hope, CNSC staff claimed that this contamination occurred, "during a time when information on the hazards of radiation were less understood and therefore activities were conducted which would not be permitted today."

This is a clarion call for the use of the precautionary principle now. At that time nuclear regulators allowed activities in Port Hope which they believed to be safe for human health. We now know these activities were not safe.

Today we are not sure that pelleting is

100 percent safe in a residential area next to an elementary school. Therefore, we should not allow it.

I urge the CNSC to deny BWXT's proposed licence change to produce uranium pellets in Peterborough. My children, my community and I thank you for taking a stand in support of our human right to live in safety.

THE PRESIDENT: Thank you very much, Ms Martin, for your submission.

Dr. Demeter...?

MEMBER DEMETER: Thank you for your submission.

A number of intervenors have brought up the issues that we have said are out of our scope or out of our mandate relative to social licence, social economic status, and the current intervenor brings the issue of ALARA and whether it applies or not in an appropriate manner, but the full definition of ALARA is as low as reasonably achievable taking social and economic factors into consideration.

And I don't want to get into the economic factors now, but I want staff maybe to tell me what social factors do they take into consideration if social licence and SES are out of the -- what does that mean to the

regulator in that full definition of ALARA? What are these social factors?

MS TADROS: Haidy Tadros, for the record.

So perhaps I will start by passing it to our colleagues in Ottawa on radiation protection, unless Mr. Mike Rinker would like to start and pass it back.

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

With respect to the societal or social and economic factors, as detailed in our Draft Regulatory Document 2.7.1, Radiation Protection, different social factors that could be considered include equity, sustainability, individual benefit, social benefit and social trust. In all cases the views of the public may also be relevant.

MEMBER DEMETER: Thank you. That's in your Draft REGDOC. Was that same definition in the previous version?

MS PURVIS: This is in our Draft REGDOC and I'm not sure if that is a carryover from our current Regulatory Guide G-129, but I can verify if you wish.

MEMBER DEMETER: That would be good.

Thank you.

DR. DUCROS: Caroline Ducros for the record.

Just to confirm, it is in the previous Guide.

MEMBER DEMETER: Thank you.

THE PRESIDENT: Dr. Berube...?

Dr. Lacroix...?

Dr. McKinnon...?

Okay, thank you. Any final comments from you, Ms Martin?

MS E. MARTIN: Yes, I have a few final comments.

I would like an answer to my question about whether the CNSC would allow a new nuclear facility to be sited next to an elementary school. And then I have a few more comments after that.

THE PRESIDENT: So we will take this one, but if your other ones were the ones you had asked before, then, you know -- okay.

Staff, do you want to comment on or respond to that question, please?

MS TADROS: Haidy Tadros, for the record.

Mr. Ramzi Jammal will answer that question.

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

The answer is yes, the siting with respect to the safety case, the safety element, the Commission's requirements is the safety associated with it.

Having said that, though, I would like to provide clarity that there were proposals of a municipality to build a school near an existing site. So we did communicate with the municipality in order to make sure that we informed them of the safety of the facility, that there is no impact, and the final decision lay with the municipality with respect to the expansion of the zones around the facility, which has no exclusion zone.

So the answer is, yes, the safety is the driver with respect to the site itself and its suitability, and the local municipality will have to determine with respect to the expansion towards the facility itself.

THE PRESIDENT: Thank you.

So, Ms Martin, I know you said you have some more questions, it's just that we do have a number of intervenors we need to get through, so if I could please

ask you to indulge us and just have your closing comments now, please.

MS E. MARTIN: Sure.

I have a final thought. When I listened to Dr. Demeter's question after Jim Dufresne's presentation, he asked about legacy issues and how BWXT evaluates contamination within the building, and I was curious because I noticed that you didn't ask about the ways that legacy contamination affects the community. So I would like to know if anyone has this information and, if so, why anybody would allow a licence renewal which puts environmental stress on people in the community.

And in listening to the presentations, I have heard from many intervenors that they are scared. I'm scared, too. I'm scared for my children and my community. We, the residents of this neighbourhood, are the ones who are being asked to shoulder the toxic burden. We are the ones who will be living for the rest of our lives with the worry about when we will get sick from the company's radioactive emissions. We gain nothing from having BWXT make uranium pellets in our neighbourhood.

As Dr. Berube said earlier, the company gains money, market share and efficiency. When you compare

these two sides, the equation is overwhelmingly unbalanced. Don't let BWXT pellet in Peterborough at our expense. Thank you.

THE PRESIDENT: Thank you for your intervention.

Our next presentation is by Ms Jacquelin Millar, as outlined in CMD 20-H2.159.

Ms Millar, the floor is yours.

CMD 20-H2.159

Oral presentation by Jacquelin Millar

MS MILLAR: Thank you, Dr. Velshi and Committee Members.

My name is Jacquelin Millar and I am here to express my opposition to the licence renewal application for BWXT NEC in Peterborough, particularly to the introduction of pelleting operations here in my city.

I'm employed at Prince of Wales Public School as an early childhood educator. I also live less than 1 kilometre away from the BWXT facility. This area of Peterborough has been my home for almost eight years and I have been employed at the school for six of those years.

During this time I have always believed my neighbourhood was a safe place to live, work and raise my family. This changed with the knowledge that BWXT had applied for a licence to have the option to produce uranium pellets here in Peterborough.

This concern was further amplified by recent findings by Dr. Aherne regarding the increasing trend in soil levels of beryllium surrounding the BWXT site.

I am here to offer my perspective as a resident in the community and as an educator at the school. My primary concern is that health and safety measures are in place to protect my community in any circumstance. I also have concerns about communication and community engagement between BWXT, the Canadian Nuclear Safety Commission and the public.

During my work day, the kindergarten students and educators at Prince of Wales spend a portion of their day playing and exploring in our yard. Our yard is the closest area to the BWXT facility, as you know. It is common for students to ingest and inhale materials during their play, including sand, dirt, soil, water, sticks, leaves and stones. They also run, jump, climb,

roll, dance and play, all the while inhaling deeply to help their young bodies fuel these activities. As supervisors, we do our best to discourage our students from putting things into their mouths, but it is not possible to prevent our students from this natural exploration that is a developmentally appropriate part of their growth.

I have concerns that if pelleting were to be conducted in Peterborough, my students may inadvertently be exposed to ingest or inhale uranium dioxide while they're at play. I understand that there is considerable debate about whether this may or may not pose a health risk to these students. I will leave this debate in the hands of the qualified professionals. However, I am concerned that there is a very limited body of evidence regarding the effects on children exposed to, and particularly on the action of, uranium particles inside the body over long periods.

Students who attend Prince of Wales for their elementary education are there for 10 years of their young lives. I asked the CNSC and BWXT to provide evidence of peer-reviewed long-term studies on the effects of inhaled/ingested uranium on children in my intervention.

In CMD 20-H2.B, Annex A, the CNSC response

states that:

"While it is true that for a given radiation dose children are generally more at risk of tumour induction than adults, no adverse health effects have been found in the scientific literature at these very small doses. CNSC staff are satisfied that the public, including young children are protected and safe from the emissions from pelleting operations."

I am wondering if these findings take into consideration other potential sources of radiation or exposures to toxic substances like beryllium that a child may be exposed to and the cumulative effect and subsequent impact on their health, growth and development. Could the added exposure act in some way as a tipping point toward disease?

The next section states that:

"Doses below 100 mSv may increase the likelihood of cancer, but so far the incidence of radiation-related cancer at doses below 100 mSv cannot be

distinguished from that of the general population."

I am not reassured by the language, "but so far", and I'm wondering if this is something that warrants further investigation.

Can a truly protective decision be made with the limited scientific evidence that is currently available about the health impacts on children that will not be disproved in the future? If not, is this risk worth it?

Concerns regarding the rising levels of beryllium in soil samples in areas surrounding BWXT, including the yard at Prince of Wales, have been raised. I agree with Dr. Aherne's recommendations that these increases need to be investigated further and addressed prior to the licence renewal.

I would also request that any studies on the effects of beryllium on children be posted on the BWXT and CNSC websites for the benefit of public information.

Conclusion number 2 of the CNSC's Executive Summary, CMD 20-H2.B, states that:

"The hazards associated with the proposed activities are well

characterized and controlled, and BWXT's operations would remain protective of the public health and the environment."

How does this conclusion pertain to emergency preparedness plans outside of the facility? If BWXT were to lose control of the facility, how what the public be protected? How would I protect my students?

We conduct several fire and lockdown drills in our schools each year to prepare staff and students in the event of an emergency. While these events are unlikely, there are procedures in place to minimize and manage risk. Staff and families are aware of these risks and the measures we take to ensure the safety of our students.

I was not able to find any information on the BWXT website, nor has BWXT, to my knowledge, done any community outreach regarding emergency preparedness plans in the event of a serious incident. Is there a resource available to the public or will it be made available to the public that will communicate these plans to the local communities surrounding the facility should their licence to pellet in Peterborough be granted? How will my school

be prepared to respond in the event of an emergency?

The safety awareness report for BWXT NEC Toronto where pelleting is currently conducted also states that:

"Facilities are at low or very low, except for the extremely unlikely incidents involving the hydrogen storage tank, which are of medium risk."

Last evening, Fire Chief Chris Snetsinger commented that in response to an emergency, from his perspective, "risk assessment is high" and that if BWXT were to have a serious incident it would be "all hands on deck". Can someone please explain the difference between these assessments, one being medium and the other one being high?

Chief Snetsinger also mentioned that the Fire Department feels prepared to address issues with the "current facility". Can the Fire Chief comment further on what he meant by this statement?

Can someone provide more information on how fire responders are prepared to protect themselves and the community in the event of a serious incident and how

the community will be involved in this process should pelleting begin at this facility?

Those living in the immediate vicinity of the area have a right to know -- of the facility have a right to know the risk they assume, especially in the event of a serious incident.

At the CNSC Meet the Regulator event in Peterborough on January 23rd, a representative from the CNSC stated that the CNSC has no jurisdiction over the location of uranium pelleting facilities. I found this statement quite shocking and I know I'm not the only one. Common sense would dictate that the location of a Class I nuclear facility should be of great importance in ensuring public safety and that the regulator would and should have jurisdiction over siting.

The International Atomic Energy Agency, of which Canada is a member, states in their specific Safety Requirements Manual, Requirement 2, section 6.8:

"Special attention shall be paid to vulnerable populations and residential institutions (e.g. schools, hospitals, nursing homes and prisons) when evaluating the

potential impact of radioactive releases and considering the feasibility of implementing protective actions."

In my intervention I asked the CNSC why we were not given this special attention to schools, hospitals and nursing homes surrounding the BWXT facility in approving the licence application and asked for details as to how they make their conclusions.

The CNSC responded by stating in CMD-82.B, Item 103:

"Yes, the CNSC considered IAEA safety guidelines and standards when creating our regulatory documents and while conducting technical assessments of licence applications. Both facilities have been in operation since 1965."

Can the CNSC elaborate on this statement as it pertains to this licence application and emergency preparedness and how the operation date plays a role in this response?

Public engagement, communication and

consultation is another concern that has been raised by several intervenors, including myself.

Both BWXT and the CNSC have conducted public information sessions to engage the public and address concerns. I was present for two of these three sessions. Attendance was poor at both of these events and the format was inconducive to public debate.

In fact, the participants were told at the CNSC information event on January 23rd that there would only be 20 minutes of open floor questions permitted. We were told we could ask questions of individual staff members after the meeting. When this was questioned, we were told by one of the presenters that they had felt attacked at the meeting in Toronto the previous evening and that they were concerned about presenters and participants feeling unsafe.

In my experience, there was no attacking going on during this meeting and there was also police presence on site to ensure the safety of presenters. It felt to me more like the public was being handled. I understand that nuclear energy can be a sensitive issue for many. However, I believe the onus is on the regulator to protect the public by answering questions from the public

during a public meeting.

I was left with a feeling -- not left with a feeling of confidence and trust in the regulator to listen and address my concerns.

This Commission has an opportunity to alleviate many of the concerns you have been presented with during these hearings. For some, the issue is an argument for or against nuclear energy. For many others, it is about where and how it is conducted and the process and transparency in the decision-making. For me, it is about protecting the health and safety of the communities and environment we live in, in any situation. It is about guaranteeing the safety of my students.

It is clear that there are any concerned citizens in Peterborough and Toronto who do not feel that BWXT or the CNSC are adequately communicating or protecting the public. I see location as the common concern. I know I would not be speaking here today if this facility was not in the middle of a residential area next to a public school.

Last night CNSC staff member Michael Rinker referred to "an erosion of trust". The breadth, the depth and volume of the intervention support the statement.

Clearly, there is work to be done to repair this trust, as is evident in President Velshi's recent address to the Canadian Nuclear Association Conference, where the results of a survey shared concluded:

"80 percent of Canadians want to get involved in nuclear-related decisions in their communities. A full 40 percent say they want to be highly involved. By way of contrast, only 20 percent of respondents have complete confidence in our efforts to consult communities."

I hope this hearing presents an opportunity to make real progress by addressing the safety and environmental concerns expressed and making the public a truly active part of the decision-making process.

I realize I have gone over my time and I thank you very much.

I just would like to add, though, that the next intervenor is a former student of mine. She is exceptionally bright and a capable young lady and she is a voice for future generations. I commend her courage in requesting to make an oral presentation at this hearing and

I thank you very much for your thoughtful and thorough attention during these hearings.

THE PRESIDENT: Thank you very much, Ms Millar, for your submission.

Dr. Berube...?

MEMBER BERUBE: Well, thank you for your submission. It was very thorough and most if not all of the issues that you have addressed have been addressed at length in the Commission meeting so far. I hope you have gained some insight through that process. Have you been following along?

MS MILLAR: As much as I could, yes, but I have also been working with my students.

MEMBER BERUBE: I understand. Yes, we all have responsibilities outside of this. For many of us this is work on top of work, right, and I appreciate the effort you put into it.

At this point I really don't have any new questions for you. Thank you.

THE PRESIDENT: Dr. Lacroix...?

MEMBER LACROIX: No, I do not have a question.

THE PRESIDENT: Dr. McKinnon...?

MEMBER MCKINNON: Yes, thank you. I think we are all very concerned about, you know, the proximity of the school in this particular instance, so it's good to keep bringing that up.

I have a question and I want to bring in some of the factors that were discussed last night by Dr. Aherne in terms of the wind directions and I'm thinking of the air emissions as being a primary mode of transport in this case. We also talked about the potential for moving the stacks to a different location, because it is located very close.

So my question is, in your preparation for if there was to be a move of the pelleting here, you would have to put new stacks. So Toronto has five stacks currently for that process and so you would have to put more stacks and you would presumably have to decide where to put them, but you also have to do some dispersion modelling. And we know from the results of Dr. Aherne's study that there seems to be a good correlation between wind direction and concentration in the soils, at least of the beryllium which was sampled. So there is a correlation there.

So could you use the dispersion models

with the wind to look at the favourable --perhaps minimizing any potential impact of the air emissions at the school location? Is that something you would consider?

MR. MacQUARRIE: It's John MacQuarrie, for the record.

So yes, I mean I mentioned yesterday that we have been looking at that, whether we can relocate that stack, whether it makes sense in looking at wind direction, and the models are part of what we take into account when we think about that.

MR. RINKER: Mike Rinker, for the record. If possible, I would like to complete an action related to this question that we had from yesterday.

And I did want to clarify, part of the reasons that we were surprised about the beryllium in soil at the school particularly is that they were not in the prevailing wind direction.

Nevertheless, the question came from Dr. Demeter. You were interested to know what were the criterion we would be looking for that may trigger us to want to examine potential for beryllium exposure to children or members of the public.

And so on that, certainly if we look

inside the facility, we require operators to have action levels for exposures to radiation as well as non-radiation like beryllium, and internationally there is a criteria of 0.1 micrograms per cubic metre that would trigger that type of testing to see if there is beryllium uptake to the worker and that could cause a health impact. So that number is 0.1 micrograms per cubic metre. It would be the same criterion that we would use for any person.

But I just want to ensure that we understand that the values of beryllium in air found outside the facility are almost identical to the beryllium concentrations naturally that are 1000 times lower than that criteria. So we would think that certainly from our past monitoring data, you know, we would have to see something that was 1000 times more to get close to that action level.

And we have seen some variation in the soil data, but that is really -- it is an impact from the air deposition. So I think it's an important question that we resolve and we are going to do some extra work in the summertime to make sure we are 100 percent certain that anything we see in the soil is well understood and we know exactly what the -- we are looking for consistent

measurements in the air as well.

But I think there is an additional action that we need to take to make sure that testing would never -- testing for exposures to humans for beryllium or radiation as members of the public would never be required.

So I will pass the remainder of this message to Ms Tadros.

MS TADROS: Haidy Tadros, for the record.

So from a licensing perspective, and I think as we have described here today, beryllium stack monitoring is happening now and I think we recognize that, and what we want to ensure and keep an oversight on is that the precautionary principle.

So in line with the abundance of precaution that we want to ensure is in place, CNSC staff will be adding additional requirements through the *Licence Condition Handbook* that BWXT monitor offsite for ambient beryllium and that this monitoring will be associated, as all other hazards are and all other molecules are, with an action level to ensure that the beryllium levels in air sort of would never approach the required health thresholds that we have been talking about.

So that is part of the framework that we

have through the licence and the *Licence Condition Handbook* and we will be putting those requirements on the licensee. And as such, we will be reporting to the Commission annually on beryllium action levels, exceedances potentially, and that will be part of our reporting mechanism through the Regulatory Oversight Reports that you see annually.

MR. JAMMAL: It's Ramzi Jammal, for the record. I would like to complement Ms Tadros' comment.

In specific, I'm disclosing it because it was contravened, to write into this requirement, specifically the schoolyards will be -- ambient monitoring will be installed in the schoolyard. I want to put that precision in the requirements that was given by Ms Tadros.

Among other things would be the school.

THE PRESIDENT: Can I just follow up on that? I mean I applaud staff for coming up with this recommendation. Why was this not thought of before? Why was this not part of the supplementary submission by staff after they had heard from the intervenors?

MR. RINKER: Mike Rinker, for the record. If I could start off.

First of all, we have quite a bit of

confidence in what the results will show, because the stack emissions have been inspected, there has been independent third-party testing of the stack emissions. And so, we would have to be -- those results would have to be wrong by 1000 to 10,000 times in order to have the type of beryllium exposures in the environment that would trigger the concerns that are being addressed here.

Nevertheless, it doesn't seem convincing to the members of the public. So we are not looking at it necessarily from a safety point of view. I think from a safety point of view we do feel that the existing monitoring program gives us the evidence we need, but it doesn't satisfy the trust or the confidence that the public would have that they are -- particularly the children at this school.

THE PRESIDENT: I hear all that. I think what we have heard from the public has been staff submitted their CMD, the public submitted their concerns, staff submitted a supplementary CMD in response to those concerns and this was not identified as an additional recommendation that staff would make to the Commission. I'm just trying to understand the process, the public's frustration of not being heard by staff or by the licensee. You know, this

somehow to me just shows that it took this hearing to really appreciate how deep the concern is.

MR. RINKER: Mike Rinker, for the record.

I think that's a fair observation. I think we provided information initially. What we found convincing wasn't convincing to the public. We explained more and what we are hearing during this proceeding is they remain unconvinced and so that's why we are here today.

THE PRESIDENT: Thank you.

MEMBER MCKINNON: I just wanted to follow up. I'm glad you did mention the precautionary principle in this case because I was going to ask about that, because I know that the emissions are very, very low, but it just seemed prudent to have that additional ability to make a decision which is possible to make before there's any construction of stacks to reduce even further, you know, using that principle.

So my question was, you know, at what point in the process do you have an opportunity to apply that check? So do you, when you are making a review of the facility, have an opportunity to look at the designs and calculated emissions or do you have to wait until they are built before you approve? At what stage can you apply that

and say, no, that is not quite good enough and we would like to enforce the precautionary principle to reduce even further?

MR. RINKER: Mike Rinker, for the record.

So under the safety and control area for environmental protection there is a regulatory document, Regulatory Document 2.9.1, and enshrined in there are some of the elements that we see in the *Canadian Environmental Protection Act, 1999*, and in this case it includes the concept of pollution prevention, so you must prevent pollution regardless of the risk status if it can be prevented, but also the notion of best available technology economically achievable. That notion applies particularly to mitigation measures to reduce emissions and so we will have an opportunity to look at any changes to the facility, any new designs and provide reviews, comments and acceptance if we feel appropriate.

MR. AMALRAJ: Julian Amalraj, for the record. I just wanted to add a little bit.

Earlier I had talked about the safety and control measures, the overall safety case, or the envelope part, and how that approval process is involved. I would like to add to what Mr. Rinker has just said about the

processes that we have in place in our *Licence Condition Handbook* that ensure adequate oversight and regulation of changes.

There's management systems that are fully compliant with N286-12, which is the governing document in terms of management systems, and there is a fully defined change control process that includes prior notification to CNSC in terms of any significant changes. This is a continuous process that happens ongoing for changes within the licensing basis.

The licensees notify us in terms of prior notification of any program changes or significant changes. In this case that would include any additional stacks or associated release limits. We review that, we actually accept that or approve that, and then subsequently the licensee executes these changes.

The licence condition in the *Licence Condition Handbook* is the final step in there, where we would -- there is a clear hold point that is associated with you will not process or you will not conduct pelleting operations before we have reviewed and confirmed everything.

That doesn't mean that the information

comes only at the last step. There is a continuous flow of information and verification on CNSC staff, including inspections associated with the changes that are being done. There are third-party reviews that the licensee is mandated to submit as per our licence, including fire codes, building codes and the pressure-bearing component registrations under TSSA.

So because of the regime that is there in terms of change management, the licensee has a framework in place to conduct changes that are within the licensing basis. The approval of the licensing basis is by the Commission at the licensing part, but the changes that happen in there -- and this is something that the licensee regularly does, and the process is established, well governed and there is continuous regulatory oversight by CNSC staff on every aspect of these kinds of changes.

So it is not that there is a final report submitted and that is when CNSC staff will be reviewing these things or looking at them. The issues of layout drawings or how exactly a particular change will be executed is something that the licensee will get to us right at the start of the process.

But there is a fully defined process that

is worked through before that commissioning report is submitted, where there is an official hold point in terms of the recommendations for the facility-specific licence that we will actually formally accept or approve and we have asked for the delegation because of the confidence in the process which has gone under the N286-12 systems.

MS TADROS: So Haidy Tadros, for the record.

And perhaps just to speak specifically to the precautionary principle, I think what we are trying to articulate is in our reviews in the frameworks of the programs that we receive with regards to the requirements and based on the as low as reasonably achievable principle, precaution is built into our approach to asking the questions, demanding more information and bringing it all together. So while we can't really point one finger on one element that will define the bottom line in terms of -- it's all of it that comes together, using an overabundance of caution and asking very conservative questions and assumptions to build into that.

MEMBER MCKINNON: Thank you very much for those clarifications.

THE PRESIDENT: Dr. Demeter...?

MEMBER DEMETER: Thank you for your intervention. No further questions.

THE PRESIDENT: A question, and I will start with BWXT, and it's about emergency response planning in the event of a fire and a follow-up to what the intervenor has raised.

When the Fire Chief was here yesterday, when asked what the consultation had been around potential pelleting being brought here, he said he really hadn't been involved in that.

If you are seriously going to be considering it and if you do decide that you may want to, walk us through how you would bring the Fire Chief in, how the emergency plan would get developed and how the community would be involved in that, please.

MR. SNOPEK: Dave Snopek, for the record.

At both of our sites, I think we have talked a little bit about in both locations the relationship with the Fire Department and the working with the Fire Department is very active. We have both Fire Departments through as the normal course of business on an annual basis and it is not just the leadership of the Fire Department. In the case of Peterborough it's all of the

shifts of the Fire Department. It's similar in Toronto.

So certainly, part of that is we talk about changes since the last tour, have there been any changes at the facility, have there been any learnings, so that we can make the Fire Department aware of that.

Certainly with a larger project, and actually we have just completed one in Toronto where we have done a significant update of the emergency plan in Toronto, we are in the midst of doing that right now in Peterborough and we are working with the Emergency Management Office in Peterborough and the Fire Department in Peterborough to do that.

I think that's -- I bring that up as an example of that would be occurring certainly in the case of a physical project as well. Where we consider pelleting, we would involve the Fire Department and Emergency Management Peterborough in those discussions, in that planning all the way through.

THE PRESIDENT: Thank you.

Ms Millar, any final comments from you?

MS MILLAR: I would just like to reiterate again that I do feel that location -- it might be overstating it, but location is, you know, obviously the

key issue in these hearings, but for me personally, I take my job very seriously to protect the students in my care and I would like to know that BWXT and the CNSC take that responsibility and will help me shoulder that responsibility.

Unfortunate things do happen and I really don't want to think about what would happen in my community should there be a serious incident and how we would all cope with the aftermath, and I would like to urge the Commission please to take this into very serious consideration in your deliberations. Thank you very much for your time.

THE PRESIDENT: Thank you for your intervention.

Our next presentation is by Ms Indie Bennett as outlined in CMD 20-H2.181. I think this is a historical moment for the CNSC. I don't think we've got an intervenor as young as this, and perhaps maybe for the nuclear sector worldwide.

So welcome today, and the floor is yours, Miss Bennett.

CMD 20-H2.181

Oral presentation by Indie Bennett

MISS BENNETT: Good morning. Thank you for allowing me to speak here today.

My name is Indie Bennett and I am 10 years old. My younger sister, Harlow, and I go to Prince of Wales Public School, which is right next to BWXT. I wanted to speak today because I am worried about BWXT getting permission to begin the pelleting of uranium in Peterborough.

I'm wondering how anyone can be sure what is the safe amount of uranium and beryllium that is to be released into the air right next to an elementary school. Even though some health officials and BWXT say it's reasonably safe to put a little bit in the air, what are the long-term effects of 10 years of recesses right next to the factory? And what if BWXT made a mistake or an accident occurred and way too much was released?

If pelleting is allowed to begin at BWXT, then we could be inhaling uranium and beryllium every single day.

The soil samples where we play are already

showing increasing levels of beryllium, and they haven't even started the pelleting yet.

I feel as if it's similar to making all of the kids smoke cigarettes without us realizing it. And even if we will know that we are inhaling toxic emissions every day, we won't have any other choice.

Again, I wanted to speak to you today because I am hoping you can make a difference and prevent the pelleting from happening in Peterborough. I really love my school of 600 staff and students, but if the pelleting did begin at BWXT, it would honestly make me scared of going to school.

I wonder if anyone that works at BWXT has kids that go to Prince of Wales.

Some people are saying that a lot of the pushback against BWXT is emotionally driven or lacking in science, so I'll stick to the facts as I know them.

First, fence to fence, the playground is only 32 of my steps away from the factory. Even our home and the hospital where my parents work are within a two-kilometre radius of the factory.

This factory is not set back in an industrial area where it should be for pelleting. BWXT is

completely surrounded by our community.

Second, beryllium levels in the soil where we play are increasing.

And lastly, if pelleting were to begin, please just really imagine this for a minute. If all things were considered equal with the schools in our city and you were given a choice, would you honestly enrol your child or grandchild into Prince of Wales being right next door to BWXT? I think the answer to this says a lot.

So I ask, can everyone from BWXT and the CNSC and the health unit look at each child in the eye at my school and promise us that we'll be 100 percent safe with the pelleting next door, now and in the future? Not relatively safe, 100 percent safe. And if you cannot do this, then how can you take the gamble with our lives?

Thank you for your time.

THE PRESIDENT: Thank you.

Dr. Lacroix.

MEMBER LACROIX: Thank you very much, Miss Bennett, for your intervention. You're very courageous. I really appreciate it.

I'm really intimidated to ask you questions, so if you're intimidated, rest assured that I'm

even more intimidated than you.

Do you ride a bike?

MISS BENNETT: Yes.

MEMBER LACROIX: You do?

MISS BENNETT: M'hmm.

MEMBER LACROIX: I do, too. And when you ride your bike, do you wear a helmet?

MISS BENNETT: M'hmm.

MEMBER LACROIX: That's great. That's good.

Does the helmet is there to protect your head in case of a fall or does it prevent you from falling down?

MISS BENNETT: I think both.

MEMBER LACROIX: Both?

Well, in my case, I wear a helmet and I keep falling down, but at least when I fall down, it protects my head or what is left of it.

So the point that I want to make is that in your written submission or in your later, you mention that you want 100 percent safe, but there's no such thing as 100 percent safe. It's sad, but it's the reality. So that's why we wear a helmet when we ride a bike.

So you understand?

That's great. Thank you.

THE PRESIDENT: Dr. McKinnon.

MEMBER MCKINNON: Thank you for coming here. It's very brave of you. I couldn't have done that at your age.

I have a question for the company. Being so close to the school, have you ever had field trips for groups of children?

MS CUTLER: Natalie Cutler, for the record.

I'm not aware of trips, field trips, but we have -- we do volunteering at the school and it's a very important part of our neighbourhood. And we want to continue that, you know, we have parents that work with us that have kids at the school. And it's important to us that the relationship is a trustworthy one. We're going to work on that.

Thank you.

THE PRESIDENT: Dr. Demeter.

MEMBER DEMETER: Thank you very much for your presentation.

I'm going to clash a bit with one of my

former Commissioners.

So when you ride a bike and put a helmet on, you voluntarily take that risk because you want to do that. When you live beside an industry, you're not voluntarily taking that risk; you're involuntarily taking that risk.

So our role is to make sure that that risk is as low as reasonably achievable, and in the case of what we like to hear is that the risk is so low that we can't even measure it.

So I understand you wanting 100 percent risk free from an involuntary exposure, and we strive to try to get to that 100 percent as much as we can, taking social and economic factors into consideration.

Thank you.

THE PRESIDENT: Dr. Berube.

MEMBER BERUBE: Was that scary? Would you do it again?

Do you think it's worth it?

Good for you. It's good to have important values in your life, and you're going to form them at your age and we like to hear them because it's really important for us to understand how you feel about your community,

your home, your family and how important that is to you.

So thank you for taking the time to share that with us.

I have to agree with our colleagues here. We can't make your life free from risk. We can help protect you from that, and so what we do here is we do the very best we can to protect you, your future, your family's future and everybody that's in the community.

We can't tell you that your lives are going to be free from problems or troubles or concerns or accidents. Nobody can do that. But what we can do is do the best we can to make sure it doesn't happen every day and it doesn't happen from the stuff that we can control because a lot of things we simply can't.

Okay? Do you understand that?

Thank you.

THE PRESIDENT: Thank you, Miss Bennett. Did you want to say anything?

MISS BENNETT: Actually, I have two other things to say.

I'm just a kid. I'm not a scientist, and I know nothing about permits for factors. But I'm confused about something that was touched upon earlier.

If the old GE building didn't exist and it was just empty land, would a new pelleting plant be allowed to be built on this land with our school right next to it?

And if it wouldn't be allowed, then why would a company that just moved into the old building four years ago be allowed to start a new pelleting process just because it's hidden behind the old GE walls?

One last thing. This guided tour for the public keeps getting brought up, but it wouldn't make me feel any better. It's guided. They'll guide us to what they want us to see.

I believe that there would be a lot that they wouldn't want us -- want to show us. I wouldn't know what they weren't showing us.

THE PRESIDENT: Thank you for that.

We won't answer your questions now, but I'm sure staff can follow up with you and make sure that you get satisfactory responses, and same with BWXT. I suspect that it's guided because it is a factory and it's got hazards in there, so -- but we'll wait for them to address those.

Again, thank you very much for coming today.

Our next presentation is by Dr. Melanie Buddle as outlined in CMD 20-H2.32.

Dr. Buddle -- sorry, it's Dr. Buddle. The floor is yours.

CMD 20-H2.32

Oral presentation by Melanie Buddle

DR. BUDDLE: Thanks so much for hearing all of us today.

Yes, my name is Dr. Melanie Buddle. I'm a historian, I'm an instructor at Trent University and an administrator at Trent University.

When this industry states that there is no risk to human health or the environment, that seems from what I understand to mean emissions or likelihood of an event or accident fall within established guidelines or allowable limits for release, but we do know that emissions increase when we add in manufacturing and that associated hazards or risk of events also increase.

To me, this means some risk is present.

As my intervention will show, I don't feel confident that CNSC or BWXT can reasonably guarantee no

increased risk to me, my family, my community or the school. For this reason, I feel you cannot approve of the pelleting amendment to the licence.

One of my concerns raised in my written intervention is that of hazardous substances on the site, not specifically or only uranium, but also hydrogen, beryllium, hydrofluoric acid.

On Wednesday evening's hearings, I did hear a BWXT staff member acknowledge uranium and beryllium as hazardous materials. We've heard the word "hazardous" in multiple contexts.

The CNSC's report from December stated that, quote:

"The primary risks associated with the licensed activities are mainly due to conventional industrial hazards and radiological hazards of uranium dioxide." (As read)

For me, conventional industrial hazards are not any less concerning than other imaginable hazards, and so this is key to the issue of risk when looking at adding pelleting.

And let me add that the fire chief did, as

my previous intervenor community member noted, mention high risk when talking about the 9,000 gallon hydrogen tank that the word "high risk" was used in that example.

I am also concerned, as my written intervention states, about accidents. I feel -- I refer you to comment 67 from the supplemental submission provided by the CNSC in response to our interventions where the number of accidents or what has been called "events" are clarified between 2012 and 2019.

And I don't raise accidents to imply that BWXT is not following good safety protocols. I can see from all of the other documents that they are meeting minimum standards regarding health and safety.

I would have liked to see ratings of fully satisfactory instead of satisfactory, but that aside, the list of events from 2012 onward includes radiation action level exceedance. I've seen that three times. Minor hydrogen fire in Toronto. Beryllium occupational exposure limit exceedance. Environmental release. Security event. Another beryllium occupational exposure limit exceedance. Stack monitoring not conducted for 30 hours.

There's more, but those are not for me a great example of a low risk even operation for workers or

for the community.

Many of us also mentioned our concerns about hydrogen.

The CNSC responded on point 87 of their supplemental submission in February by saying the estimated risks associated with the hydrogen storage tank are similar to those that would exist in any location where hydrogen storage tanks are located.

Staff agreed with BWXT's conclusion that the likelihood of an explosion is unlikely.

The risks may be similar to those in any other location, but that does not mean that they are non-existent. And for me, the risk actually is in this location.

A large tank of hydrogen in my neighbourhood would not be a small matter if there was an explosion, and I do think that the fire chief would agree that that's not a small issue given the high risk comment.

When I read the CNSC's supplemental submission, one comment struck me in a response to concerns that were raised about beryllium, and this was again from the supplementary submission.

Concern 16 was that there is no safe

exposure of beryllium, and the CNSC response was that,
quote:

"Strict monitoring and engineering controls are in place to protect workers and the public from beryllium exposure and additional personal protective equipment and clothing are administered to workers who may be exposed." (As read)

Despite this assurance that a lot of monitoring and safety are used, implying that beryllium is serious, they move on to say, quote:

"Given the low levels of beryllium emitted from the Peterborough facility, it is impossible for a member of the public to exceed any provincial guidelines for beryllium. In a hypothetical example, CNSC Staff have calculated that if an individual was breathing directly from the stack all day, they would have an intake 20,000 times less than the tolerable intake for health effects."

(As read)

I found that to be a ridiculous comment to place in their response to us. It seemed egregious to me to have that comment in their response to us when the BWXT presentation slides for this hearing acknowledge the hazards of beryllium, known to be carcinogenic, primary concern is inhalation, highest risk posed by vapour deposition process or small particles in the air.

So I found that comment, frankly, flippant and dismissive in the response to us.

Lots of people have talked about zoning and location. I don't want to go too far into that, but the CNSC Staff confirmed that BWXT is in compliance with municipal and provincial permitting regulations.

The CNSC is "responsible for ensuring facilities can be operated safely. If pelleting could not be conducted safely protecting workers, public or environment at either facility, the CNSC would not license the activity."

This is the heart of what intervenors are saying. Pelleting cannot be conducted safely.

And this isn't because we're all afraid of the uranium dust. I personally am not afraid of the risks

to the uranium dust emissions.

I've heard the concerns. I appreciate them. You've made a good case for me that the risk is very low for the uranium in the community.

But what I am afraid of is that the related hazards, including flammable substances on site, accidental events like "radiation action level exceedance" doesn't demonstrate low enough risk for the location.

If there was a scenario in which a company like BWXT applied for a permit to open a brand new facility on a plot of land that happened to be empty and the company said, great location, but it's pretty close to a school, it's in a residential neighbourhood and then they added, "Just so you know, this empty land with really good zoning happens to have some contamination from older industries and there's a legacy of bad community relations and some mistrust, but we're not worried about that", I don't think you would approve a licence in a case like that. And I think my previous intervenor, Indie, made that point quite nicely for us.

We can agree that it's not an ideal location. I think everyone in the room would probably agree that this is not ideally located.

We're here because the factory is already there and already zoned.

I accept that that may make it a good business case. That's the only reason I can think of that we wouldn't look at another location, actually, that it's economically a good case. But that's not a good reason for me for proceeding.

If you would be unlikely to approve a new facility in a location like this, then the same principles should apply. A legacy site should not ease the way to a licence amendment.

I don't want to spend too much time on emergency preparedness or communication, but I did want to mention that I do live half a kilometre from the school and my kids also attended the school.

I have been in my house for 18 years. I can remember some BWXT communication and newsletters, but I can -- my memory is that I've had four or five of those communications in 18 years. And they do not communicate what's happening in the industry.

They do tell me about volunteerism, civic activism, that workers are part of my community, and I accept all of that.

I'm also a volunteer and a philanthropist in my private life. That's a red herring for me. It's not related to the actual work happening. And that's not what I get from the communications, is a sense of what the industry is. It's a communication about a good neighbour on a surface level, and that's a different thing.

And I should add that I've been in the factory. I have had a tour of the factory, so I'm one of the people that has been there. But I would say good community outreach hasn't been my experience.

I've never had soil samples, that I know of, done at my home or had any information about sampling in my area.

So to conclude, for this licensing and for the amendment to manufacture pellets, the fact that BWXT has to show in their submission their plans for a potential accidental release speaks to all of our concerns. It does seem hypocritical to simultaneously be reassured that this is so safe we could happily hang onto their smoke stack and breathe in the emissions and yet also acknowledge the extensive preparations in case of an accidental release of a hazardous chemical or to simultaneously say that workers are safe and the company's in compliance and doing a great

job while also showing us 22 recorded events or accidents or to simultaneous reassure us that everything is safe but admit that regular air and soil testing is necessary and, in fact, that more of it will need to be done.

We wouldn't really need to keep debating and discussing how safe is safe enough or having to debate what it means to say that a safety standard is as low as reasonably achievable if we just acknowledge that there might be better places to put this.

Industrial parks exist to get industries of any kind into areas on the outskirts of cities. Given all this, instead of going through this process of having to repeatedly defend the site as not that risk or arguing that it is meeting safety protocols with ALARA principles, couldn't we just admit that it's causing consternation from us and defensive from the industry because it is not possible to satisfy all of the conditions to make it profitable, safe for workers, safe for the environment and a low level of risk?

The last thing I would say is I agree that the bicycle analogy has some weaknesses because we don't have a choice for where we're living. Somebody has a choice to ride a bike and where you ride your bike matters

as well. And you can pick a safe area to be in, and we haven't been able to select that for our own homes.

So thank you for your attention. You've been troopers up there. I am very impressed, and I've watched a lot online in and around my own work day, but thank you.

THE PRESIDENT: Thank you for your intervention, Dr. Buddle.

We'll start with Dr. McKinnon.

MEMBER MCKINNON: Thank you for your comments, and I have no further questions.

THE PRESIDENT: Dr. Demeter.

MEMBER DEMETER: Thank you as well for your presentation. I have no further questions.

THE PRESIDENT: Dr. Berube.

MEMBER BERUBE: You've covered a lot of ground, and thank you very much for coming to speak to us.

Just out of curiosity, are you a medical doctor or are you --

DR. BUDDLE: No, I'm a Canadian historian.

MEMBER BERUBE: Oh, really.

DR. BUDDLE: I feel I've had to get up to speed on a lot of the science. And as you've heard from

many of the intervenors, we have had pages and -- like 85-page documents to read.

I'm a fast reader because I'm a historian and I can find what I need to find quickly, but no, I'm not a medical doctor.

MEMBER BERUBE: Yeah, you're a historical forensic auditor, basically, is what you do. I understand.

So as you've been drifting through all this and coming in, you know, quasi-literate, I guess probably that's the best way to put it because it takes a long time to become an expert in any field. You're well aware of that.

What do you see as the most challenging part of this?

DR. BUDDLE: I think part of the challenge is actually sorting out the things that are related to the issue and the things that are red herrings, and that's why I raised the issue of factory workers and the company being good at volunteering in the community or good philanthropists. Nobody would question that.

I mean, we work -- we live alongside people that work at -- in the company, so I think -- I actually think sometimes the challenge is what is the issue

that's being raised and what's the concern.

And that's why I was really careful to say I, personally, am not concerned about what I see as very small emissions of uranium. I understand what you have said, what the company has said about the science. But I think -- and my previous intervenors today have said this.

One of the challenges, and Ms. Mintz made it very clear, was if we accept the nuclear industry -- and some of us are okay with the nuclear industry. And I think we're getting dragged down a path that suggests we are all anti-nuclear.

And I'm not going to say my opinion on that, but I would say when we ask for it to be a different location, it's not because we're saying -- it is because we're saying there's a way to do this industry and we might even accept that the safety protocols are in place and that the risk is low. But when we ask for a different location for pelleting or increased industry, that's the reason, is that there's enough concern about safety that why not put it to a different location.

And that's why I talk about the defensiveness piece. I actually feel badly that BWXT and the CNSC is put in a position of constant defence of the

position. But they wouldn't be in that position if the location wasn't a huge question.

So that's why I'm stressing, whether we all agree about the safety of the emission, the point is that there's that risk, and there's other risk on the site. And that's why the school keeps getting raised. We're not all afraid of uranium dust on the schoolyard. I mean, I'm not happy about it, but I'm not a scientist. But other things can happen. So.

THE PRESIDENT: Dr. Lacroix.

MEMBER LACROIX: Thank you very much, Dr. Buddle. Very interesting. You're as loquacious as an historian can be.

One question: Do you ride a bike?

--- Laughter / Rires

DR. BUDDLE: I do ride a bike. I do wear a helmet, and I am totally aware of risk. But I don't ride my bike in dangerous locations.

--- Laughter / Rires

THE PRESIDENT: Some points that you raised -- let me just get clarification from BWXT, because our focus has been very much around beryllium and uranium dioxide and the hydrogen -- potential hydrogen tank.

What other hazardous materials are on your site?

MR. SNOPEK: Dave Snopek, for the record. So we've talked about uranium; we've talked about beryllium; we've talked about hydrogen.

We have compressed gases on our site. We use those for welding, for example.

All of these that I'm about to talk about are small quantities of material.

We use some flammable liquids on the site. We have acids on the site. So we have small quantities of all of these.

We do have zirconium on the site. Now, zirconium in -- you saw the picture in the presentation of the fuel bundle. So the zirconium in the bulk, kind of as tubes, is not a flammable metal. But I think mentioned in one of the early days, maybe in Toronto, where we call it decanning, but basically when we've made a tube, and if there's a quality issue with the tube, we want to recover the uranium material that's on the inside. So we cut that tube open to recover the uranium. So when zirconium is present in fine turnings, that's a flammable metal. So that is a hazard. And again, we have that in low quantity.

So we have most materials that are present in a normal industrial environment.

THE PRESIDENT: The intervenor raised her concerns with staff's response to number 16. This is on safe exposure of beryllium. And I guess you thought that staff was maybe undermining the level of concern that existed with the analogy given that one could be smoking right at the exit of the stack. And I think staff was just trying to demonstrate that it would still be safe.

You mentioned that you've had an incident where for your air supply mask the wrong filters were used, and you didn't detect that for a while, protecting against vapour as opposed to particulate. What if something like that happened with your stack and the HEPA filter there, that a wrong filter is used? What would happen then?

MR. SNOPEK: Dave Snopek, for the record.

Part of the root cause or part of the cause of the respirator filters is they look and feel very similar of the different types of filters, look and feel very similar. A HEPA filter is very much different than any type of filter. It is several inches thick. And we have controls over the purchasing of those filters, over the installation of those filters, verifying that they've

been installed correctly. We also have monitoring that indicates that the filter's been installed and it hasn't been, let's say, omitted.

Actually, some of the learnings -- the issue with the beryllium respirator was entirely independent from environmental. I just want to make that clear. But some of the learnings from that event we've implemented across the organization in terms of strengthening the way we purchase what we call critical-to-safety components. And certainly the HEPA filters for ventilation fall within that category.

So we learned from that and put in place very strict and formal means for purchasing those items, for receiving those items, and making sure they're deployed correctly in the organization, not just limited to respirator filters.

THE PRESIDENT: Thank you.

And last quick question for staff, the number of safety incidents, the 22 incidents. How do you reconcile that with having a good safety performance?

MR. AMALRAJ: Julian Amalraj, for the record.

So in terms of the events being reported,

all the events were anticipated operational occurrences in terms of our safety terminology in that they are -- the severity in terms of events do not constitute accidents. I just wanted to clarify the terminology part of it.

The licensee is mandated to document these, take lessons learned from them, implement corrective actions, as well as have a program and a process in place to ensure future occurrences are mitigated associated with the events and the lessons learned from what they have experienced through the normal operations and the processes in place associated with that.

The 22 events over the 10 years as a whole are what you would see from most of these facilities. It's not like an abnormal event. And any one event itself did not constitute a significant failure or a major loss of control in terms of the operations of the facility. Even some of the reports associated -- for example, one of the hydrogen fires. The lessons learned was that if you're implementing pipes, you have to ensure that the joins or associated stuff are not multiple joins and that are prone for leakages. There were additional corrective actions implemented by the licensee to ensure that that is something that would never happen again.

But from a severity point of view, as well as the operations point of view, those are the things that you would expect the licensee would face during normal operations of these.

DR. DUCROS: Caroline Ducros, for the record.

I would just add just for a correction for the record, there were 21 reportable events. And we have a regulatory information bank where we track the corrective actions to their completion. So I think that the takeaway is that these were events that there's multiple barriers that have to be -- have to go wrong or have to be terminated before there's a more severe accident. These were non-safety-significant events where an early barrier would've been the one that we would have -- it would have been reported upon.

THE PRESIDENT: Thank you.

Dr. Buddle, over to you for any final comments, please.

DR. BUDDLE: I would just say I think it's a bit of a euphemism to call what is still an accident an "event." Just for that point.

And I think the only other thing I would

say is that I still actually don't think the question that Indie asked quite nicely has been answered through this proceedings, which is that if the land was free and open and no factory was on site, and a proposal came forward to build a facility like this one in this location, would a licence like that be approved. And if it wouldn't be approved, I would like that same logic applied to a legacy site that inching forward for me doesn't actually address that issue. And that's why we're dealing with location.

But thank you very much for your time.

THE PRESIDENT: Thank you for your intervention.

Our next presentation is by Ms Kate Haines, as outlined in CMD 20-H2.40.

Ms Haines, the floor is yours.

CMD 20-H2.40

Oral presentation by Kate Haines

MS HAINES: Good afternoon, and welcome to the beautiful city of Peterborough. I hope you've been welcomed before.

And this has been very interesting to me,

this listening to all of the comments. So I hope that what I have to say is not redundant. It's more personal than many of the interventions that have been made today.

So thank you to the Members of the CNSC and BWXT and the other interested parties here who are listening to the concerns of those of us who have the time, energy, and courage to speak for the neighbours of the BWXT/Hitachi site. And thank you to CARN for making us aware of these issues that we're all discussing today. You know, and a particular thank you to Indie, because she represents my grandchildren, which is wonderful, and her choice to ride a bike, which is an environmentally sustainable activity, Indie. Just keep safe.

So my name is Kate Haines. My family has lived within the two-mile radius of GE-BWXT for 40 years. In the last 20, we have lived within two blocks of the property of concern. I've walked around this facility for many years. In the last few weeks I've increased my walking in this area, looking at the homes and imagining the lives of the people in those homes.

I worked as a registered nurse and wound care specialist, doing palliative work in the community, so I'm a community health nurse doing home visits for over 20

years. During this time, among many other nursing activities, I provided support for clients on chemotherapy and in palliative care.

Most memorably, and most specific to GE, was treatment and support for clients with pleural mesothelioma and the wounds that can be unfortunate for palliative patients and the alleviation of pain for those dying and their families. And I don't know how many of you have actually seen the kind of wounds that people in palliative care can sometimes get, the agony and the treatment that is required to keep people comfortable.

In the innocence of past days, asbestos was thought to be a safe product along with DDT, red dye no. 4, parabens, many others. Yet in my neighbourhood, we are now being provided with assistance for the removal of asbestos from our homes. It has become a known fact that GE workers brought this material home not only on their clothing but as a freebie to help insulate their homes. My neighbour two doors closer to the site is going through this process right now. This has involved not only removing her family and her tenants from their homes for an unspecified period of time, has caused great disturbance in their everyday lives, but as my neighbour says,

post-abatement her house is a disaster, and her family does not have any related illness.

So the relevance and irony of this is we now know the health hazards of asbestos, and there is evidence to support the many illnesses that our local factory contributed to. Lives have been lost, and now there is an attempt to somewhat rectify and pacify by offering removal of this toxic material.

I'm asking, Why is there the possibility that we in Peterborough may be subjected to yet more and perhaps more dangerous toxins?

One of my other roles in the nursing agency was to sit on the occupational health team. And I cannot begin to express the frustration that we as nurses felt as we attempted to have access to materials to make our everyday work life safe. From my perspective, as well as that of many of the nursing team, occupational health and safety was mostly directed at those in management positions and office staff, not those of us who travelled many kilometres daily dealing with innumerable situations that had both potential dangers and remedial health hazards.

Office workers -- they were lovely and

equally deserving -- their had their chairs checked for safety. We in the field, for instance, struggled for over three years to get safety needles to avoid needle-stick injuries and their subsequent health hazards. So think about AIDS and hepatitis.

So as a neighbour, wife, mother, grandmother, as well as a nurse, I take issue with the lack of concern I find in the documents I've reviewed about the BWXT renewal and possibility for uranium pellet production and beryllium usage in Peterborough for the residents of this community. Asbestos caused irreparable damage to workers and families, and the current abatement process is just a little wee Band-Aid to make us feel safer.

Uranium dust cannot be removed from the human body. Think of the hundreds of children in close proximity to the BWXT plant at Prince of Wales School. Do I have to think about my four children and their futures, not to mention the individuals and families who live within the supposed two-mile safety radius?

And then there's beryllium. Should we be thinking about sarcoidosis, chronic beryllium disease in our futures? We who live in this neighbourhood do not sit in the offices of executives or facilities with safety

measures. We work and play in our homes, our gardens. We walk the streets. We send our children to the local school. Is this to become a risky place to have a normal life?

Does uranium affect soil quality? Does beryllium? Many of us in the neighbourhood have done what we have been asked to do by different levels of government. We garden, we compost, not only to provide nutrients to our gardens, but also to keep excess garbage from the landfills. We diligently work on bringing insect and birdlife back to support local pollinators. We work on protecting tree canopies to provide habitats for creatures of all sorts and to help keep this earth cool in the summer.

I find it difficult to understand just how the possibility of having these toxins will not affect the quality of the food we grow and the air we breathe. This distresses me, as I know it does many of my neighbours. We are trying to support a sustainable environment.

Further to my concerns about uranium are those related to beryllium. I will mention briefly concerns from the article "Beryllium Public Relations Problems: Protecting Workers When There Is No Safe

Exposure Level," by David Michaels and Celeste Monforton. And I have a copy here. It's from the European Union Publications.

And I found it really interesting when I opened up this site, because the very first picture is of a bee, this beautiful domestic bee. And we know what happened with bees, and neonicotinoids like eliminated the populations. I talked to my brother a couple of weeks ago. His entire hives -- they're all gone. And that's a toxin that's been put into the environment.

Anyway. In this scholarly publication, they express concerns over chronic beryllium disease and sarcoidosis, dermal rashes amongst other diseases. They report cases world wide in which the exposure was less than the 2 milligrams per cubic metre. Right?

But most concerning, and I believe it is a concern for many of our presenters today, that there is evidence that the guidelines for exposure are industry and politically influenced. And at the risk of repeating myself, as a former member of an occupational health team, I was certainly aware of the mechanism of politics working against the protection of workers and communities.

We as parents, grandparents, concerned

members of this community do our best to protect our children and fellow citizens. So we use baby seats, we don't smoke inside our homes. Peterborough has created a sustainable community policy as well as a climate emergency plan. We are becoming a forward-looking community.

So not being aware of "health hazards" and "non-conclusive animal studies" from section 12 of the CNSC's responses doesn't mean that problems don't exist. ALARA, as low as reasonably achievable -- and whose definition of "reasonable" is this? From section 21, BWXT will be more communicative and form a citizen committee. Where would we be if CARN had not raised all of these concerns?

So my feeling is that it's not anxiety and fear that the citizens are raising; it's frustration and anger at the inability of us small folk to effect our change in our community.

So I would suggest that until there have been independent environmental studies done in areas where pelleting has taken place over a statistically relevant period of time, that the BWXT application for pelleting just be put on hold for now, and that the research needs to be done to protect any community, not just the community in

which we live.

I would like, therefore, to suggest that your greatest priority would be to first do no harm.

So thank you for listening to this.

THE PRESIDENT: Thank you, Ms Haines, for your presentation.

Dr. Demeter?

MEMBER DEMETER: Thank you very much for your presentation. I personally have quite enjoyed being in Peterborough for the past few days. Had a nice stroll down the street last night, clear my head.

Anyways, as your role as an occupational health nurse, did you ever work with GE, former GE, or BWXT?

MS HAINES: No, I didn't, but when I did a student rotation when it was GE, and I found that really fascinating like going through the old factory. And it is an old factory. Have you been through the old factory?

MEMBER DEMETER: No.

MS HAINES: Yeah, well. Wander around. And I mean this is a decrepit old -- it's a beautiful old -- architecturally fabulous old building. But the entire area is a hazardous site.

MEMBER DEMETER: Okay. Well thank you, I have no further questions.

THE PRESIDENT: Dr. Berube.

MEMBER BERUBE: Well, thank you for your presentation. I don't have any questions.

THE PRESIDENT: Dr. Lacroix.

MEMBER LACROIX: Thank you very much, Mme Haines, for this presentation. And I've learned new things in your written proposal. Thank you very much.

THE PRESIDENT: Dr. McKinnon.

MEMBER MCKINNON: Thank you for your comments. You made the analogy to asbestos; it was previously thought to be very useful and safe, but then subsequently learned to be extremely hazardous.

So I have a question to CNSC staff. And I know it's been partially answered, but then there has been some discussion, particularly about low levels of exposure. But what's the length of the historical record of experience? And is there any sense that there may be any emerging differences of opinion about the safety effects, the health effects?

MS TADROS: Haidy Tadros, for the record. Perhaps just to clarify, with regards to

uranium and beryllium? Thank you.

So I'll ask our epidemiologist, perhaps, to give an overview of some of the records that do exist, and I believe your question was the length of historical records that we have looked at.

MEMBER MCKINNON: Yes, it was particularly in reference to the fact that, you know, the analogy to asbestos. There was a complete change of opinion. And I was just wondering if there's any indication that there might be a similar change of opinion emerging for either beryllium or uranium.

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

So perhaps Kristi, if you can start from an epidemiological study, and we'll go from there based on her description.

MS RANDHAWA: Kristi Randhawa, radiation and health sciences officer, for the record.

So as noted previously, there have been quite a few studies that have been done looking at uranium exposure. So we have many studies of workers with long follow-up periods, Gulf War veterans, as well as environmental studies, so individuals who are living near

to nuclear facilities, including the Port Hope facilities. We also have studies looking at drinking water with elevated uranium levels. So these studies do have long follow-up periods which are needed in order to look at the latency periods of cancer.

In addition to these epidemiological studies, we also have information from animal studies, which help inform what we know about I guess lung tumour formation and other effects other than just alterations in kidney function.

In terms of low dose exposures and our understanding around that, I may turn it to our radiobiologist in Ottawa.

MS BURTT: As stated, I'm a radiation biologist in the Health, Sciences, and Environmental Compliance Division.

With regards to our thinking on low dose and new science and how we take that into consideration, the intervenors are correct. The information's always evolving and we always add to what we know and constantly refresh to make sure that the dose limits that we set for members of the public and workers are protective.

So even though the science might be

changing, one thing that has remained constant is that what we know at low doses the risk is in fact low. It's proportional to dose.

So with any new publications that come out, we might be learning more about the different proteins that are involved in DNA repair, we might be learning about different aspects of exposure, but the risk remains low. So that's the important takeaway message there.

MR. RINKER: Mike Rinker, for the record. Just to close this off, if I could.

In the *Licence Condition Handbook* for BWXT and for other nuclear installations there is a series of CSA standards that must be implemented, CSA standard for determining the radiation dose to members of the public, for an environmental risk assessment and for monitoring.

The implementation plan for these standards requires up update of predictions every five years and that is to take into account any minor changes to facilities but also to take into account new science. So new science is captured in the regulatory framework we have for these facilities.

THE PRESIDENT: Thank you.

Ms Haines, over to you for any final

comments.

MS HAINES: So when new science becomes available and this is determined to be dangerous to the kids at Prince of Wales and to the neighbourhood and the people in Peterborough and our drinking water and this lovely community, are you going to close the plant down? Is that going to happen when new science becomes available and you are going to go okay, changed our minds?

I'm just curious. I mean, how does this all evolve?

I know that things are evolved politically and economically, but it's a question. **THE PRESIDENT:** I think it's a serious enough question. I will ask staff to have another go at saying -- I think what I heard staff say was that certainly for uranium, because I don't think they addressed beryllium, that they have decades of experience with that and the science has just confirmed that at low doses it's not safe.

Is there a likelihood that the science will say you know what, all these decades we've had it wrong?

MR. JAMMAL: Ramzi Jammal, for the record. What we do is it's a continuous

improvement, and if the new information determines that what new science is determining there is an unacceptable risk and if it's an imminent health and safety issue, yes, we will shut down the operations and bring it back to a safe environment.

So in other words, the new science will provide us with information of technological added barriers increase in the operation and increase the layers of defence in depth in order to ensure that safety is maintained at all times.

I would like to ensure everybody if there is imminent health and safety the operations will go down.

I will pass it on to Mr. Mike Rinker with respect to examples of enhancement over the time.

MR. RINKER: Mike Rinker, for the record.

So we have seen changes. They are influenced by advances in science. One particular advance was understanding the bio-kinetic model of tritium as it would be entered into the body of a human.

And we've seen the derived release limits based on that new science altered what our predictions were for exposures to members of the public and to workers.

I think there is a number of margins of

safety taken into account. And that's where the principle of ALARA -- ALARA was mentioned previously -- comes into play where there is a detailed program that every licensee must have, BWXT included, where we would go in and inspect to make sure that they are continually implementing improvement measures over time to continually reduce exposures, keep them as low as reasonably achievable.

And through those programs the line you would cross to go from is this a safe operation to is there a change, we better think of shutting this down, there's a very big gap between those two. And the changes in science are more subtle. I don't think we are in a position to see that when there is a new paper published, this shouldn't operate. They are not that vast.

THE PRESIDENT: Thank you.

Any final 30-second comment?

MS HAINES: Thank you for making this forum available for all of our concerns.

THE PRESIDENT: Thank you very much for your participation.

Our next presentation is by the Canadian Nuclear Workers' Council, as outlined in CMDs 20-H2.42 and 42A.

I think we have Mr. Bob Walker. So the floor is yours.

CMD 20-H2.42/20-H2.42A

**Oral presentation by the
Canadian Nuclear Workers' Council**

MR. WALKER: I was going to say good morning, but it's good afternoon.

Good afternoon, President Velshi and Members of the Commission. I am Bob Walker. I am the National Director of the Canadian Nuclear Workers' Council. I know some of you are aware of the Nuclear Workers' Council and my predecessor Dave Shire. Dave Shire is still out there helping. He has at least one more retirement left to go. But I replaced him January 1st of this year.

Presenting with me are Tabitha Mocon, President of Unifor Local 599; Hilda Blanchard, President of Unifor Local 524; and Kirk Billings, Vice-President IFPTE Local 164.

The Nuclear Workers' Council, Unifor and IFPTE are here in support of BWXT's application to renew their Class 1B fuel facility operating licence at both

Toronto and Peterborough.

I am going to talk just a little bit about the Nuclear Workers' Council and who we are and why we are relevant. The main purpose for this submission is I want you to have the opportunity to hear from the union reps that work at the site here.

The Canadian Nuclear Workers' Council is comprised of unions. So our members aren't the members that work in the different facilities; our members are the unions that represent those people. And that is across the country, across the industry. It goes for uranium mining in Saskatchewan, fuel processing, electricity generation in Ontario and New Brunswick, nuclear power plant construction and refurbishment, including the current refurbishments at Darlington and at Bruce, medical isotope production and research and development.

So our member unions represent people across the entire Canadian nuclear industry.

The CNWC has been a collective voice of unions across that industry since 1993.

The goals of the Council are to ensure the perspectives of Canada's nuclear workers are heard. We want to strengthen the collective voice of nuclear workers

through their unions as partners in Canada's nuclear industry and enhance public knowledge about the many benefits of Canada's nuclear industry.

You will find more information about that on our website.

Our priority -- and this is the priority of the unions in the Nuclear Workers' Council and the Nuclear Workers' Council itself. Our priority is always the health and safety of our members. That is paramount.

We talk about this a lot in public hearings and you will continue to hear us talk about this. The protection of workers, the public and the environment are inter-related. You can't have one without the other. If you are protecting the workers' health and safety, you are protecting public health and safety. So they are very inter-related.

Yesterday there was some discussion about whistle blowers, and one of the things we tell people is this is a very highly unionized industry. If you have a union there protecting you, you are more likely to be open and raise concerns because you have the union to protect you if you raise concerns.

And more importantly our members work at

the plants but they also live in the communities. They play in the communities. They have families that live and play and go to school in the communities. This is important. It is important for all of us. We have a very vested interest.

So Nuclear Workers' Council related activities. The way the Nuclear Workers' Council operates, we have a board of directors. So we have the major unions that are in the industry, including Unifor, have a spot on our board of directors. The board of directors meets frequently.

We also have a conference once a year, and at that conference we have people from across the industry that compare issues they are facing. This is important because I worked for Ontario Hydro OPG for 27 years in the Darlington nuclear power plant. So my world is Darlington nuclear power plant but I get to hear what is going on at the Bruce plant, at the Lepreau plant, what is happening at mines in Saskatchewan, what do they do, what are the issues they face, what is happening in fuel fabrication.

So we get to talk to one another. So when we are talking to our friends and neighbours and colleagues about nuclear power, we can talk with more fulsome

knowledge.

In my report I said 2018, but actually I was off by a year. I'm getting older. It was 2017 we had a conference right here in this hotel and BWXT gave conference delegates a tour of the plant. I think it's fair to say that all of our delegates were very impressed with that tour.

It was apparent to all of us that the importance of worker health and safety was obvious.

In preparation for this hearing I had not been to the Toronto plant, so I asked BWXT if I could have a tour of the Toronto plant and they were very generous and offered me a plant tour in January. Once again the standards were very apparent. I had a tour of the plant and standards of safety were high, worker engagement was high. I stopped and talked to workers throughout the plant and I walked away very impressed.

We've also intervened in a number of previous licence hearings. We do that at both operating licence hearings, environmental assessment hearings, etc., and engage with the CNSC.

So BWXT's application, CNWC has read the application and we support it. We have read CNSC staff's

response and we support it. BWXT has met all licence obligations throughout the term of their current licence and have demonstrated their ability to protect the health and safety of people and the environment.

So the CNWC member unions at BWXT Nuclear Energy Canada are at the Toronto facility Unifor Local 252, Peterborough Local 524 and Local 599 and the International Federation of Professional and Technical Engineers, Local 164.

I am going to turn the presentation over now. I think Tabitha is going to take the lead on that.

MS MOCON: Good morning. Unifor is Canada's largest private sector union with more than 315,000 members across the country working in every major sector of the Canadian economy. It was founded in 2013 as a merger of the Canadian Autoworkers and the Communications, Energy and Paper Workers unions. However, their roots in the labour movement began long before that, in the 1930s.

In Peterborough BWXT employs 92 members of Unifor, 52 of which are in Local 599-0, which I am the President of, and Local 524 has 40 members, which Hilda Blanchard is the President of.

Our diverse membership includes licensed tradespeople such as millwrights, machinists, tool and dye makers, welders, mechanics, electricians, as well as clerical staff and quality assurance technicians, some of which are certified through government organizations.

On occasion some of our members are deployed to customer sites or nuclear power plants to assist with the installation, inspection and maintenance of the goods that we produce.

Over the years unions have played a prominent role in the enactment of a broad range of labour laws and regulations covering areas such as overtime pay, minimum wage, health and retirement coverage, civil rights, unemployment insurance, Workers Compensation and maternity and parental leave.

Unions are also important because they help set the standards in the workplace for education, skill levels, training, working conditions and quality of life for workers.

In summary, they represent the collective interests of their members and help establish laws improving job conditions for everyone through legislation at the national, provincial and local level.

I will pass it to Hilda.

MS BLANCHARD: Our Unifor members are engaged with the company in many aspects of environmental, health and safety. Therefore, we are involved in ergonomics, policies, beryllium safety as low as reasonably achievable, and workplace health and safety committees that meet regularly.

In addition, unionized members hold eight of the 13 positions on the Emergency Response Team, and every three years BWXT allows any employee the option of taking an emergency first aid course. Prior to commencing a new job or task, specific safety and awareness training is mandatory and, if required, PPE will be supplied by the company.

Furthermore, depending on the area the employee is stationed in, ongoing medical surveillance may be required. We participate in scheduled and unscheduled audits of our processes and procedures by our customers, the Canadian Nuclear Safety Commission and the International Atomic Energy Agency.

MS MOCON: Through the Progressive Aboriginal Relations Committee, abbreviated to PAR, which includes union and company representation, we have reached

out to our local Indigenous communities by volunteering, job fairs and shop floor tours.

PAR is a program by the Canadian Council for Aboriginal Business that supports progressive improvement in Indigenous relations and a certification program that confirms corporate performance at three levels. We continue to complete each step in the program following their guidance and are getting closer to achieving the first certification level of bronze.

MS BLANCHARD: Unions have often been cast as militant and truthful. That is a label that does not offend me. I'm okay with being able to challenge employers and use our right to speak up and to do so without retaliation. I feel comfortable knowing that the nuclear industry in Canada is highly unionized and they have those same rights. Unifor has a good relationship with BWXT. However, we have a responsibility of holding the company accountable, if necessary.

Many of us live in this community and have friends and families who do. Therefore, we have a stake in this as well. As union members we are not conditioned to sit on the sidelines. It is ingrained in us to have a questioning attitude.

We support the application for the renewal of BWXT NEC 10-year licensing operation, and we would ask you to do the same.

Thank you.

MR. WALKER: Unfortunately Karl Harrison, who is the President of Local 252 in Toronto, could not be here today for family reasons. But he did send me an e-mail saying that the Local in Toronto does fully support this application.

Now I would like to turn it over and I notice we are out of time. I apologize. We have like four presentations as one here.

I would like to turn it over to Kirk Billings. He is the Vice-President of IFPTE Local 164.

MR. BILLINGS: Good afternoon. Kirk Billings.

The IFPTE is a diverse labour union advocating on more than 80,000 men and women in professional, technical and administrative occupations across North America.

Peterborough is home to Local 164, 16 of which work at BWXT in Peterborough. Our membership is comprised of skilled draftsmen and women, as well as

technical illustrators who help BWXT support the nuclear industry with clients such as OPG, Bruce Power and New Brunswick Power.

For our membership safety is a top priority and the IFPTE believes that BWXT makes all efforts to ensure our membership works in a safe environment. Although we are employees of BWXT, as a union we have the ability to intervene through our grievance process if we feel our workers are not in a safe work environment.

Our membership has seats on all workplace safety committees, as well as policy committees that BWXT has, as well as active in our Emergency Response Team.

We appreciate that BWXT allows our union to have an active voice in not only our worker safety but as well on the public safety and environmental safety.

BWXT supplies our members with all required PPE, requires our members to complete annual health and safety training. They offer emergency first aid training and enforce stringent workplace procedures.

For our membership the majority of us live with our families in the Peterborough community. We rely on and are happy with the opportunities that BWXT provides, and for that we strongly support BWXT's application for the

renewal of its 10-year operating licence.

Thank you.

MR. WALKER: I understand that the benefits of Canada's nuclear industry are not a factor in the Commission's decision-making process so I'm going to go through this next slide very briefly because I think it's important. I have heard a lot of discussion this week so far about we're taking the risk and there's nothing in it for us.

Nuclear power is safe, reliable and affordable. It provides base load generation for the province of Ontario and New Brunswick. Our way of life could not continue without that base load generation. We depend on nuclear power to a huge extent.

Sustainable electricity without the production of greenhouse gases is essential. Previous speakers spoke about climate emergency. We are not going to reach our goals without nuclear power, period. There is no doubt about that at all.

This is an industry that was pioneered right here in Canada. It is our industry. Right from the very beginning it was developed here in Canada with the domestic supply chain. The next generation of nuclear

reactors is being developed here in Canada as we speak, as the Commission is very well aware.

The other one is jobs. There is a huge number of not just jobs but good quality jobs. If you want a young person to be healthy and safe, give them a job. If you go to a community -- drive up to the Bruce. I say this and it might sound like I'm joking, but you drive up there and it looks different. The sky is bluer, the grass is greener, the cars in parking lots are bigger.

Nuclear power provides a lot of good jobs. It is an important industry for Canada. It is an important industry for all of us and BWXT is a very important part of that industry.

In summary, the BWXT facilities in Toronto and Peterborough have been operating safely since 1965. During the term of their current licence they operated safely and met all commitments. In the CNSC's 2018 Regulatory oversight Report all CAs were rated satisfactory.

That's one thing that people didn't talk about too much this week. This is not a 10-year licence to do whatever you want. There is a public meeting annually with the annual CNSC staff's regulatory Oversight Report

which is presented to the Commission. And we regularly intervene in that. We intervened last year and we will do so this year.

Unifor, IFPTE and BWXT work together to ensure high standards of workplace health and safety. The CNWC, Unifor and IFPTE are all in full support of BWXT's application.

We would like to take this opportunity to thank the CNSC, CNSC staff and I really want to thank all the intervenors this week. You almost have to be at a nuclear site to understand what this means for us. Everyone in the province of Ontario can get hold of their union rep, they can call the Ministry of Labour if there's a concern. We have one added factor in our health and safety, and that's the CNSC.

CNSC staff are in our workplaces all the time. I responded to one of my members had electrical contact. Before the Ministry of Labour was there the CNSC staff officer was there. So we have that added layer of oversight.

The fact that we have such public meetings, public hearings, adds again to that layer of safety because as you saw this week, they are keeping you

honest. So having public scrutiny and CNSC scrutiny makes our workplace health and safety better. That is very important to us and we really appreciate it.

Thank you. If you have any questions, we would be more than happy to answer.

THE PRESIDENT: Thank you all for your submission.

Dr. Berube.

MEMBER BERUBE: Thanks for that.

You have said a lot of nice things about BWXT, which I wish somebody would say that about me. That would be a great day indeed.

Do you have any outstanding grievances right now, that you would like to share with us, against BWXT?

MR. WALKER: I will say one thing. Before we came in here, I said the floor is open; you guys answer the questions.

MR. BILLINGS: For the IFPTE, we have no open grievances against BWXT at this time.

MS MOCON: Local 599 has no open grievances.

MS BLANCHARD: Local 524 has no open

grievances.

MEMBER BERUBE: That's a pretty impressive record, I would say.

I have no further questions.

THE PRESIDENT: Dr. Lacroix. Dr. McKinnon. Dr. Demeter.

MEMBER DEMETER: Thank you. I'm going to get a bit poetic here.

In Charles Dickens' book *A Tale of Two Cities*, the opening line: It was the best of times, it was the worst of times.

Through a number of intervenors I have heard about real concerns about occupational health and safety with the site, and you quote it back to 1965, and then I hear your presentation and there are no issues. So help me reconcile some of the intervenors who had serious concerns about previous practices under GE, which includes the timeframe that you talked about and your picture that you are presenting.

MS MOCON: I can only speak from my experience since I've worked with GE, then BWXT since 2001.

I can say that I haven't experienced what some of the people many years ago may have experienced.

What I have experienced is a strong union, a good relationship with the company where we are able to take concerns to them and work it out. That's all I can really speak of, is what I have been involved in and I have been the President of the Local for eight years now.

MEMBER DEMETER: Are any of your unions dealing with on a case-by-case basis some of the outstanding issues some of the intervenors have raised? Is there a support mechanism? Is there a resource mechanism for potentially previous employees who have ongoing work for the system workplace safety and hazard with the Workers Compensation Board equivalent here?

MS BLANCHARD: Yes. Local 524, we are dealing with the WSIB cases that started out at GE Motors.

MEMBER DEMETER: But none from the nuclear industry component.

MS BLANCHARD: No, none that I'm aware of.

MEMBER DEMETER: Okay, thank you.

MR. WALKER: We did talk with this before we came in. It's all because some of the intervenors were quite passionate about the concerns they raised.

It is important to know that before -- I'm trying to think of the right way to say it. It used to be

a lot more fluid movement of people between different parts of the company at GE. So you might work at motors one day and later on in your career you might go to nuclear.

So there might be some people that have some outstanding claims, but they didn't work in the nuclear part of it their whole career.

MS BLANCHARD: I can speak a bit more on that.

With Local 524 I started in 2004, and at that time we had a union relation not by seniority but by bumping rites through the Collective Agreement. And at that time when I did start there was a lot of employees that did the majority of their service years at GE Motors and then entered into the nuclear facility.

So probably a few years, maybe five, six years after, approximately, they were all new people.

MEMBER DEMETER: Okay, thank you for sharing that.

THE PRESIDENT: Mr. Walker, I've seen you in this room at least for the last couple of days so you have heard many of the intervenors make very impassioned submissions.

Have you had a chance to speak to any of

them during the breaks that we have and share with them -- and I know as employees you accept the risk of working in these facilities, but share your experiences with them?

MR. WALKER: No, I haven't. What I've been doing is trying to think of how we can engage better here.

We have reached out. As you heard, in 2017 we had our conference here and local Labour Council, they came to the conference. One of their vice-Presidents spoke at our dinner.

And we have reached out to the Labour Council to see if they want some more engagement with us. They have not been receptive of our outreach to date. I'm not trying to put them down at all. I'm just saying that I think it's important that we do outreach to them and have some dialogue about what is going on.

I think there is a lot of misinformation, and I know people have already talked this week about they don't want more information. They don't want you to convince them that it's safe or they don't want BWXT to convince them that it's safe. But at some time you have to sit down and have a dialogue about what is the operation, what are the hazards, how you protect from hazards.

As workers and worker reps we have the luxury of having that dialogue with our employers and we feel safe doing our jobs. And somehow we need to reach out to the community as maybe a trusted voice and have some of this dialogue.

But I have not had that dialogue with people this week.

I've actually been quite -- the way the dollar is going has caused me great concern because in my world I am a very strong advocate of nuclear power. I really truly do not believe we are going to achieve the climate goal, the carbon reduction goals we have, without nuclear power. And that's going to require advancing this industry.

So when I hear the discussion this week about shut it down, it's very discouraging.

Pickering and Darlington need the fuel that is developed here to produce the power for Ontario. This industry is very inter-related and we need it.

THE PRESIDENT: Thank you for your intervention. Thank you for coming.

We will break for lunch and resume at ten to 2:00. Thank you.

--- Upon recessing at 1:05 p.m. /

Suspension à 13 h 05

--- Upon resuming at 1:50 p.m.

Reprise à 13 h 50

MR. LEBLANC: We will be resuming the Commission hearings, so if everybody could take their seats, please. Thank you.

THE PRESIDENT: Okay, welcome back, everyone.

Our next presentation is by Ms Eleanor Underwood as outlined in CMD 20-H2.79 and 79A.

Ms Underwood, over to you.

CMD 20-H2.79/20-H2.79A

Oral presentation by Eleanor Underwood

MS UNDERWOOD: For the record, my name is Eleanor Underwood.

Thank you, Commission Members for giving me this opportunity to speak.

For the record, I'm opposed to pelleting

in the Peterborough location. Toronto does not want pelleting and neither do I.

One would assume that a Class I nuclear facility located within the limits of a city would be robustly monitored. It is very disturbing to discover that this is not the case for the BWXT Peterborough facilities.

BWXT relies on a single air emissions test at one ventilation location to determine uranium air emissions for all of Peterborough.

BWXT uses three test points for beryllium. There have been no air emissions studies beyond the plant boundary to establish baseline conditions.

There have been minimal soil contamination studies on or around the proposed BWXT facility.

The BWXT environmental risk assessment provides no information concerning potential discharges to groundwater or seepage of surface water from the BWXT site.

According to the CNSC this lack of monitoring complies with the *CSA Group Standard 288.6-12, Environmental Risk Assessment at Class 1 Nuclear Facilities and Uranium Mines and Mills*. Unfortunately, this document costs over a thousand dollars to obtain, so I was not able to review it.

BWXT operates in the former General Electric (GE) facility. General Electric operated on this site for 126 years manufacturing electrical equipment. During the manufacturing process of electrical equipment such as electrical motors, capacitors, and printed circuit boards, GE used many metals and fluids.

Dielectric fluid such as PCBs, Hexane, Heptane and Benzene are just a few of the dangerous chemicals used by GE. These chemicals are known to have serious carcinogenic effects, are known to cause serious mutations in human and animal DNA.

After reading an article in *Peterborough This Week* future uses of General Electric site may be limited due to chemical contamination dated August 31st, 2017. It is apparent that both Peterborough Public Health and the Ontario Ministry of the Environment and Climate Change are aware of significant and serious contamination at the BWXT.

Quoting a spokesperson from the Ministry of the Environment and Climate Change:

"The article states that the site contains residual historic PCB and volatile organic compound

contamination in the soil and ground water."

The article also states that Peterborough Public Health have been aware of PCB contamination since the 1990s. To date, GE and BWXT have not conducted any studies to determine the extent of ground water or surface contamination.

In response to my intervention, CNSC staff responded:

"CNSC staff reviewed the BWXT ERA and concluded that risks attributable to emissions of radiological and non-radiological substances from BWXT's current and consolidated operations in Peterborough are very low and, therefore, no adverse effects to human health and non-human biota are expected."

How can the CNSC be so confident in saying this? What does very low mean? And, how is that measured?

BWXT monitoring is so limited in the parameters and methodology so poorly defined that the data collected is statistically insignificant. Any claims BWXT

makes in regard to contamination from air, water or soil are statistically not sound. Simply put, BWXT samples little and not often.

For example, an environmental risk assessment requires monitoring of all potential impact area. Areas of the plant where materials are received and shipping must be monitored. BWXT does not provide any information on or even monitor ventilation systems, open door shipping and receiving.

Assessment of exposure to contaminants is typically done by using monitoring methodology that predicts high impact areas of contamination, identifying and monitoring of possible locations of fugitive emissions is a must.

In consideration of the materials and process BWXT uses, designing a monitoring model based on the assumption of finding insignificant or low levels is not accepting. Not "expecting to find contaminants," should not equal "little or no monitoring needed."

Radiation is carcinogenic, meaning it causes cancer. It only takes one radioactive particle to damage a human cell. Knowing this, "as low as reasonably achievable, acceptable," CNSC staff has stated that uranium

of beryllium are not dangerous to human health in low levels. Experts disagree with this statement. Who should I agree with? The CNSC or Dr. John Edwards?

I think Dr. Edwards is a canary in a coalmine. His warning the warnings of others should not be ignored. If you choose to ignore them, then prior, and I emphasize "prior" to BWXT being granted a licensing change to pellets, an independent third party with recognized expertise should design and implement a comprehensive monitoring plan to include:

1. Fully and accurately describing any and all existing background contamination of the site.

2. Determining if ground or surface water contamination already exists within the plant, or outside the perimeter of the plant.

3. Implementing emissions testing using plume dispersion modelling and taking into account, into consideration, all points of release identified and rogue.

4. Undertaking a human health risk assessment which would take into account long-term accumulative exposure to contaminants.

All monitoring methodology parameters and results should be made public immediately upon completion

and results reported on a regularly quarterly or bi-annual ongoing basis thereafter.

There should be *no Freedom of Information* form required to obtain results.

And, all documentation should be provided at no charge to those who request them.

Finally, an excellent communication plan and a detailed cleanup and a health assessment plan in the event of radioactive materials being released from the site to the surrounding community and wider city needs to be developed in conjunction with city, provincial and federal participants. Ideally, this kind of facility would be located far from human habitation and activities.

THE PRESIDENT: Thank you for your submission, Ms Underwood.

Dr. Lacroix?

MEMBER LACROIX: Thank you very much, Madam Underwood, for your intervention.

You've raised an interesting question and I will redirect it to BWXT, concerning what you call the fugitive emissions from doors and windows and openings. Are they monitored?

MR. SNOPEK: Dave Snopek, for the record.

So monitoring of emissions that might go through doors aren't monitored. But what we do do is we monitor the workplace air, so we do that in our beryllium area and we do that in our R2 area, as well. And those measurements are all exceptionally low right at the workstation where the material is being used.

MEMBER LACROIX: Does that answer your question?

THE PRESIDENT: Dr. McKinnon?

MEMBER MCKINNON: Yes, thank you, especially for your detailed comments about the monitoring program. We have had a lot of discussion of that over the last few days; that's something we're very much concerned about.

I would like to add another question to BWXT about the design of the monitoring program because Ms Underwood brought up a good point about you know it's based on dispersion modeling, for example. So we know that models are just estimates and you know may be wrong, even, or uncertain, so you can't really be sure if the locations that you think might have maximum exposure for where you, you know, should perhaps do some monitoring might not be the -- the right location. So what redundancy do you have

in the design of your monitoring program to account for that variability? And, if you could also just describe a little bit of the comparison between your measured and monitored results?

MR. MacQUARRIE: It's John MacQuarrie.

Are you asking about beryllium specifically, or what are you asking about?

MEMBER MCKINNON: This would be, I presume, you have air emissions for uranium and beryllium?

MR. MacQUARRIE: Okay.

MR. SNOPEK: Dave Snopek, for the record. So we monitor directly in the stack.

MEMBER MCKINNON: Sorry, I was meaning you have the air emissions but they're deposited, so it's really the soil sampling based on the air emissions modeling, dispersion modeling.

MR. MacQUARRIE: So in Peterborough, we don't do any spoil samples for beryllium or uranium, okay, but we have indicated based on you know what we've -- what we've seen in the IEMP results that we are going to start monitoring the soil for beryllium.

THE PRESIDENT: But you could extrapolate that to your Toronto facility for uranium where you do

around the fence sampling and monitoring. And how does that correlate with your modeling, given what your emissions are?

MR. MacQUARRIE: It's John MacQuarrie, for the record.

So we monitor for uranium. We have air monitor samples around the periphery, around the fence line, and we also do annually 49 locations for soil sampling. And you know all of that data is consistent with what we'd expect in terms of what we're measuring at the stack; we're not seeing any inconsistencies.

THE PRESIDENT: Thank you.

Dr. Demeter?

MEMBER DEMETER: Thank you very much for your presentation. I don't have any further questions.

THE PRESIDENT: Dr. Berube.

MEMBER BERUBE: Thank you for your submission.

I've got a question CNSC. It has to do with something the intervenors brought up with regard to significance of just having one monitoring point which is in the stack here in the local community. Could you explain why that particular single monitoring point is

sufficient and why it has significance or maybe it doesn't; maybe she's right?

MR. AMALRAJ: Julian Amalraj, for the record.

The design is such that there are several layer barriers in the wall. One of the key barriers is dynamic negative pressure, and the entire facility is under negative pressure, and air flows only in one direction, and everything that comes into the facility goes up the stacks, and which is why monitoring of the stacks is critical and it is representative of what else is happening in the facilities.

MEMBER BERUBE: So I guess the question is, is that adequate for this particular facility?

MR. RINKER: Mike Rinker, for the record. The results of the stack monitoring are showing that they are already meeting the ambient air quality standards. And for that reason we say it's adequate.

MS SAUVÉ: Kiza Sauvé, for the record.

As does the MECP and as noted before the licensee is required to submit a dispersion summary -- maybe it hasn't been mentioned -- a dispersion summary,

dispersion modeling, so they remodel it every year and they submit those to the MECP as well, and we review them once in a while, as well. So, yes, it is adequate.

MEMBER BERUBE: And do you believe them?

MS UNDERWOOD: I think they - they monitor the way I look for mice in my house. I actually don't want to find any mice in my house so I actually don't look very hard. I actually stand in the middle of the kitchen and look at the floor.

--- Laughter

MEMBER BERUBE: BWXT?

MR. MacQUARRIE: It's John MacQuarrie, for the record.

So there's three stacks and we monitor those continuously; we've described that, there are separate systems on those.

We have zones in our facility that are related to beryllium and we monitor each one. There's a program that says what we do in each one. We've got personnel samples that are being taken; they're worn sort of at the upper part of the body near the head.

We're also monitoring fixed stair samples in that facility, as Mr. Snopek described, and we have a

cleaning program; we're continuously cleaning and we're taking swipes and we're looking for beryllium in those swipes.

So there are numerous points where we're measuring beryllium.

MEMBER BERUBE: So you're looking pretty hard, in other words?

MR. MacQUARRIE: We're looking pretty hard.

MEMBER BERUBE: Okay.

THE PRESIDENT: Thank you.

Ms Underwood, over to you for any final comments.

MS UNDERWOOD: I would like to make a response to that.

In the environmental risk assessment where are the parameters and the methodology for your sampling? Where is the methodology? How often do you sample? Why do you sample? Where do you sample?

It seems to me that it's sort of -- it's not there. There must be a reason, like why one point at the stack for uranium? Why three points for beryllium? Why not five points? Why do we only sample for beryllium

in 2014 and 2018 and 2019? Why don't we sample every year? Why don't we sample three times a year? What are the answers?

THE PRESIDENT: So, Ms Underwood, we've spoken extensively about sampling and monitoring and what the plan going forward may look like, so I'll save the responses, because I think we've got what we need for that.

Anything else you want to add?

MS UNDERWOOD: Has the site ever been checked for Dioxin? And the other thing is, why is not a nuclear facility such as this with emissions not put in a building with negative pressure? Certainly BWXT has sufficient funds to do so. So, maybe we could think about if they are going to produce what they want to produce in the building, well, then maybe the building needs to be restructured and the code changed on it, so in fact it reduces the emissions -- the building design itself.

I don't think I should have to be taking any risk because BWXT doesn't want to spend the money. They're a large multinational corporation. If they want to do it, they can.

Thank you.

THE PRESIDENT: Thank you very much.

Thank you for your submission.

The next presentation is by Ms Janice Keil as outlined in CMD 20-H2.144 and 144A.

Ms. Keil, the floor is yours.

CMD 20-H2.144/20-H2.144A

Oral presentation by Ms Janice Keil

MS KEIL: Hello. My name is Janice Keil.

I want to talk about dancing, particularly that relationship of trust, collaboration and vulnerability that dance partners need to have. As the saying goes, it takes two to tango. However, this dance card is more crowded with other partners: BWXT, Public Health, City Council and most importantly the citizens of Peterborough, of which I am one, living in the downtown core. So it's looking more like square dancing, a long established tradition here, rather than a tango. But there's no so much promenading and do-si-do'ing going on, but more dips and dives, and double passes when it comes to data being hidden.

I've read the CNSC's sections 15.1 and 2, the ERAs, the annual monitoring compliance reports, but

I've been more curious about the role of that second regulatory tango partner to the CNSC and that is MECP or the Ministry of Environment, Conservation and Parks. Their license to ECA, the Environment Compliance Approval number 9339-9HDRHJ, was inherited by BWXT from GE Hitachi. But as I learned from Julian Amalraj here at the CNSC Open House January 23, any significant change beyond the present scope of operations such as the introduction of pelleting will require BWXT to have their own new and independent ECA. The time for BWXT to continue to Velcro itself onto GE will finally be over.

As well, it was confirmed by staff that CNSC as the federal regulatory body, does not supersede the role of *Ontario Regulations*, thus, we should be expecting such a hearing such as this at the provincial level in the near future.

For an ECA an ESDM is required. The last one for BWXT was done November 6th, 2013, by the engineering firm Conestoga-Rovers. In my first phone conversation with Jamie Mugford and Aaron Gordon at the MECP Peterborough Field Office February 12th, it was disclosed that a more recent one was just completed January 30th, 2020 by GHD Group, but that it would require an FOI, a *Freedom of*

Information request to gain access to the data. Thus started the dance to find this data.

It involved lots of phone calls from BWXT to me, a sudden secret meeting at Tim Horton's right across the road here on February 14th to show me the emissions summary table on which there was no air mod data listed for either uranium or beryllium. The insistence that this was all there was the ESDM.

Blowing the whistle at City Council. At that point no one else had seen this particular table, neither Public Health, CARN, the media, no one except me. At that point after the City Council Meeting, BWXT caved to public pressure following the council broadcast and put a table on their website but it wasn't the one I was shown.

Now BWXT has admitted in an email to me February 28th that there actually is a full ESDM document but they will not release it.

At this moment in time there is still an FOI request out for that through the *Peterborough Examiner*. MECP will not release the data, neither will BWXT.

This then leads to my first three-part question that I would appreciate being answered. As BWXT had seven years to complete an updated ESDM, why did they

wait until January 30th, 2020 knowing that their required FOI, which takes a minimum of two to three months would ensure that no one would have access to this most recent emissions monitoring data before the CNSC hearing?

If a company has nothing to hide, why is there not full transparency and public disclosure of data? And when will we actually get this data?

Of all the contaminants on the list I saw, and I was not allowed to have a copy, I was allowed to look at it for just a few minutes and scribble down notes -- I saw that the two contaminants that are the most dangerous and also the most concerning for both public health and the citizens of Peterborough, beryllium and uranium dioxide, were not even listed as being monitored. Why not?

So there are two specific ways that MECP has to be involved. They have to do monitoring of the POIs, the points of impingement, within the 1000-metre radius of the potential influence and protection areas, as confirmed by Aaron Gordon, Senior Environmental Officer, Peterborough Field Office, February 14th.

The two factors that Gordon indicated as lacking in the other IEMP data that for example is required by CNSC are consistent variables and uniformity in the

laboratories used to perform the air mod testing. This is exactly why MECP is the body to do this consistent monitoring.

As well, any talk of pelleting has to be considered as a new facility operation as per land use planning guidelines and comply with the 300-metre separation distance between Class III industrial facilities and sensitive areas such as schools and single-family residential neighbourhoods.

Presently, BWXT is adding a third storey to their building for their plant pelleting operation, so it's assumed that they got a building permit for that new construction. That would call into force the MECP setback guidelines of 300 metres. Fifty-five metres away from an elementary school is in clear violation of provincial regulations.

The dangerous uniqueness of the Peterborough site is unparalleled anywhere in Canada and that singularity can be illustrated by comparing the two BWXT locations.

The 2018 Toronto uranium monitoring data indicates that the maximum concentration levels are almost 12 times higher in the area of influence directly around

the plant, 11.9 micrograms compared to 1.3 in the plant itself and 1.0 in the area 1 kilometre away.

That area directly around the Toronto facility is zoned industrial commercial, but in Peterborough it is single-family residential with a school. That means that it's families and schoolchildren that will bear the greatest burden of health effects here in Peterborough.

There needs to be --

MR. LEBLANC: Madam Keil, just go a bit slower, please, for the interpretation service. They are really doing their best, but it's quite a challenge.

MS KEIL: Okay. Okay. Thank you.

MR. LEBLANC: Thank you very much.

MS KEIL: There needs to be tracking of cancer clusters in neighbourhood cases, non-occupational neighbourhood cases of beryllium exposure in the many residences surrounding the plant, particularly in the pediatric population, something that Public Health and Cancer Care Ontario are not doing at the present time. I just had a conversation, a very good one, with Cancer Care Ontario just before coming to this hearing today.

This is coupled with the fact that the

company is presently not handling the 65 kilos of annual beryllium use properly, evidenced by the 2018 compliance report. That report noted that not only was there a beryllium ventilation system failure but also that the beryllium hazardous waste reduction goal was not achieved.

So that's question 2: If BWXT cannot even handle their beryllium properly, then why allow them to take on another significant procedure, this time pelleting, creating uranium dust?

Question 3: Will MECP enforce this 1000-metre protection area around the POIs -- this is a long the plant fence line -- to the full extent of the law and perform the monitoring that they are obligated to do? And will CNSC withhold their licensing decision until MECP does their job and undergoes its regulatory procedure to ensure that BWXT fully complies with all provincial laws and does not continue to engage in a cover-up of its data?

And now a personal note is in order.

Eighteen years ago I saw the signs, as both a teacher and a health and safety whistleblower and occupational health and safety repayment, against my employer, of cover-up, of obfuscation of data, a real concerted lack of action in the protection of those most

vulnerable in society, our children and young people. As a whistleblower, I am seeing exactly those same signs now with BWXT.

In addition to my being suspended for speaking up -- and I am still suspended 18 years later -- and protecting the students in my care, I bear another terrible legacy in common with those with beryllium disease, both berylliosis and CBD.

Exposure to beryllium results in a potentially fatal pneumonitis-like lung condition, the same hypersensitivity pneumonitis that I have suffered from ever since my exposure to workplace contaminants at the Toronto Catholic District School Board. I have it all, the nodules and scarring on my lungs, the honeycombing, the ground glass opacity and the knowledge that I could and most likely will die if I get anything during flu or COVID-19 season.

For me, in my research, to discover that these kids at Prince of Wales, through exposure to beryllium, could possibly develop this same horrific respiratory condition that I could die of at any time is too much for me to bear. It is a huge risk for me to be in the midst of large public gatherings like this at this time

of year, but to speak out again, this time against a company that is covering up essential data, is a risk that needs to be taken and thus I am here speaking.

The collaborative relationship between the dance parties of CNSC, MECP and the Peterborough community is absolutely imperative.

There is another dance that people know of and it is called the tarantella, the dance of death. That is a dance that this community in Peterborough has had going on for way too long as the company town of GE. It is time to change that dance card from a dance of death to a dance of collaboration to keep everyone, workers and residents of Peterborough, safe going forward for all future generations. Thank you.

--- Applause / Applaudissements

THE PRESIDENT: Thank you, Ms Keil, for your submission.

Dr. McKinnon...?

Dr. Demeter...?

MEMBER DEMETER: Thank you very much.

I was intrigued about this sort of alternate regulatory process you brought up from the province and I was going to ask staff if they routinely

interact with the -- and I have to get the name right -- Ministry of Environment, Conservation and Parks and whether they have access to this Emission Summary Dispersion Modelling Report referred to.

DR. DUCROS: Caroline Ducros, for the record. I will begin and then I will pass it to the environmental protection people.

I just wanted to point out that yes, we do collaborate with the Ministry of Environment, Conservation and Parks.

We also -- I would like to point to the *Licence Condition Handbook*. There is a condition in the CNSC's licence that says under 15.1:

"The licensee should also demonstrate compliance with the MECP and municipality requirements for air emissions and liquid effluents through updated ESDM..."

I have the acronym list at the back.

"...and the ECA as required."

MS SAUVÉ: Kiza Sauvé, for the record. So I can add a little bit more.

The licence also requires or doesn't --

requires the licensee to comply with all other acts and regulations that are out there.

In terms of our collaboration, as Dr. Ducros mentioned, we do receive the reports, ESDM and ECAs, and we can ask for them at any time. We do review them periodically. We do our own assessments as well and we work with the MECP when we need to. So it's not ongoing, all the time, but we do have that collaboration.

MEMBER DEMETER: Thank you.

To BWXT, is there something proprietary about this kind of report? It seems like it's difficult to have access to it. I'm not going to speak to the Tim Hortons meeting, but just in general. Who owns this report? Do you get a copy? Can it be made available?

MR. MacQUARRIE: No, it's not difficult to share. It's on our website now. So this is the first time we had had a request for it. Our staff offered to show it at our site. That was not preferred, so they met offsite and showed the table. We got a second request and we put it on our website.

MEMBER DEMETER: Okay. Thank you.

THE PRESIDENT: Dr. Berube...?

Dr. Lacroix...?

BWXT, one of the things that Ms Keil mentioned was about a building permit and third floor in your existing facility it sounded like in anticipation of pelleting. Tell me what that is about.

MR. MacQUARRIE: It's John MacQuarrie.

We have no building permit. There may be some confusion. We are replacing part of our roof right now in the main building where we produce fuel. We have had a leak and so the roof is being replaced. So there are workers up on the roof doing things. But we have no building permit and there is certainly no intention to build on that building.

THE PRESIDENT: Thank you.

We are trying to see if we can get the MEC people online to follow up some of the questions. We haven't been able to do as yet, but when they join us later we will follow up with some additional questions.

So I will turn it over to you. Any final words? And before that, thank you very much for coming today and, as you said, putting yourself at additional risk. We appreciate that. Thank you.

MS KEIL: So just one last question and then just a closing comment.

So to Mr. MacQuarrie, it is not on your website. I just checked. The only document that is there under the Ministry of Environment is the former ESDM from 2013, which, as you can recognize, is very, very long out of date.

The only other document is for example the emissions summary table, which, as I say, was the one that was not shown by me, by both Kathleen Augustin and the plant manager at our meeting on February 14th. So I don't even understand why there was that switchover. But you are absolutely incorrect in your statement.

So in terms of my closing statement, I just have an observation, that there are a lot of men here in this inner sanctum and so I'm just wondering, with the exception of the two Commissioners, the few women that are here are mainly in communications and not on the technical side and I wonder just generally in terms of the nuclear industry whether there might be a greater emphasis on health and safety and not just how it applies to the baseline standard, which is basically the adult male, but those of us as women and those children who are not smaller males but are entities unto ourselves, that there might be actual real emphasis put on health and safety, on how that

affects many people in the community and not just the men, if you actually had more women trained in the technical side, you know, as engineers. Because right now on all the people that have spoken to anything technical over these last few days have all been men and I really would like to see more women and then maybe we will finally have an emphasis on health and safety and actually what we need in society to keep people safe.

Thank you very much.

THE PRESIDENT: So while what you say is music to my ears personally, I do want to acknowledge we have some very technical experts here from the CNSC who are women, both at our headquarters and here, and I didn't want that to be overseen.

MS KEIL: That's good to know. Thank you.

THE PRESIDENT: Our next presentation is by Ms Laurie Pezzack, as outlined in CMD 20-H2.200.

Ms Pezzack, the floor is yours.

CMD 20-H2.200

Oral presentation by Laurie Pezzack

MS PEZZACK: My name is Laurie Pezzack.

I'm a resident of Peterborough and live down the street from BWXT.

This is my son Gavin. He is a four-year-old boy who attends Prince of Wales School, which, as you know, is a stone's throw from the BWXT facility on Monaghan. Gavin started junior kindergarten last September.

The kindergarten wing of the school is the closest part of the school to BWXT. The playground where the children play is the closest part of the school's property to BWXT.

Like many other children Gavin's age at Prince of Wales, he plays in the playground, running, jumping and, among other things, playing in the snow and in the dirt. Gavin spends an average of two hours every day playing in the dirt where there have been found to be carcinogens, namely beryllium.

He also plays in the dirt where there are uranium dioxide particles, which has been quantified by the European Chemicals Agency, an Agency of the European Union, as a hazardous chemical, fatal if inhaled and fatal if swallowed. This is listed directly on their website.

I have been hearing from BWXT and nuclear

governing bodies that nuclear fuel processing is safe. However, research presented by Dr. Edwards of the Canadian Coalition for Nuclear Responsibility, and Dr. Cathy Vakil of the Canadian Association of Physicians for the Environment has stated it only takes one particle escaping filters and being released into the air that would cause lifetime detrimental damage to a human body.

Children are our most vulnerable and susceptible humans, and despite BWXT claiming it is perfectly safe, this plant is operated by humans. Humans by their very nature can make mistakes and accidents can and do happen.

I worked at a manufacturing facility which was ISO-certified. This means that all processes from the manufacturing area to the office had to be documented. We were subject to many rigorous audits, both internal and external. Despite having these documented processes in place, accidents did happen and people got hurt.

I have been reading and hearing about the fact that BWXT and the CNSC have procedures in place to prevent emergencies. But again, these are humans that plan and execute these procedures. If an incident is to occur, let it occur in the middle of nowhere where there aren't

children and residents of a populated city that would be the recipients of a disaster.

I have read countless reports, even from the CNSC, about exceedance of exposure limits. One report even cited incorrect filters in respirators were used for almost two years. Another report detailed how the nuclear facility workers were exposed to 3,000 toxic chemicals, including at least 40 known or suspected human carcinogens.

This type of irresponsibility of a company clearly outlines to me the lack of care BWXT has towards its employees. If its own employees are treated this way, it stands to reason that public exposure outside the plant is not of concern either.

Emissions over the limit have already been recorded in Toronto and if a licence extension that includes the right to manufacture pellets in Peterborough is granted, such an exposure in Peterborough is a real threat. Our children would be in the direct line of fire if such an exposure were to occur.

Manufacturing using radioactive materials has no place in a populated area like Peterborough, much less beside an elementary school full of our most vulnerable population of society, our children.

I want you to think about Gavin, your children, your stepchildren, your grandchildren and any other children you love and hold dear in your life when you think about deciding whether or not to extend a licence that would allow the Peterborough BWXT facility to manufacture uranium dioxide pellets.

Wouldn't manufacturing these pellets far away from a populated area where there is no children's school across the way be a better decision so that no harm could ever come to any of the children or the greater population of our wonderful city of Peterborough?

I want you to think about whether you would send your child to a school right beside a facility that manufactures nuclear pellets. Would you send your four-year-old child that you love with your whole being and would do anything to protect to a school right beside a facility where trillions of dangerous particles are spewing from a stack every year or where there is a hydrogen tank with the potential to explode and cause irreparable damage and potential harm to the children?

And would you also let your child play in a playground in the dirt where there are beryllium and uranium dioxide particles?

I would respectfully request the licence application for the Peterborough facility be amended so that manufacturing of uranium dioxide pellets in Peterborough would be prohibited. It is the responsibility of the governing body for nuclear safety to protect the people in this country. Please protect our community, its citizens, BWXT workers and our children. Thank you.

THE PRESIDENT: Thank you very much, Ms Pezzack.

Dr. Demeter...?

MEMBER DEMETER: Thank you very much for your presentation and your photo.

The issue of proximity to the school has been a constant theme through the whole deliberations and hearing, so I can assure you that we have heard that message. I have no questions, though.

THE PRESIDENT: Dr. Berube...?

Dr. Lacroix...?

Dr. McKinnon...?

Okay. For you, any final comments then, please?

MS PEZZACK: I have no further comments. Thank you.

THE PRESIDENT: Thank you for your intervention.

So before I introduce our next intervenor, Commission Members, we have folks from the MECF on the phone if you have any questions for them, particularly after our last intervention, or the one before the last.

Dr. Demeter...?

MEMBER DEMETER: Thank you.

This is to BWXT and they are online. I did pull up your emissions summary table that is online. The only thing it doesn't have is a year. It just has Table 4 with all the contaminants and then two tables with a -- anyways, I had trouble finding out what year this applied to, so maybe you can confirm that.

MR. SNOPEK: Dave Snopek, for the record. Our ESDM tables are updated routinely.

MEMBER DEMETER: Okay.

MR. SNOPEK: That update is the latest one, which was completed January 31st of this year.

MEMBER DEMETER: Okay.

MR. SNOPEK: Prior updates for that occurred in 2019, 2018, several in 2017, and so on. But that is the latest version.

MEMBER DEMETER: And when did it go up?
When did you start posting this?

MR. MacQUARRIE: John MacQuarrie, for the
record.

Approximately the middle of February.

THE PRESIDENT: And while you have it up
there, Dr. Demeter, does it have beryllium and uranium
dioxide reported?

MR. SNOPEK: It's Dave Snopek, for the
record.

I can address that. Uranium is on the
emissions summary table. Beryllium is not on the emissions
summary table and the reason for that is because it was
screened as an insignificant source term according to the
MOE guidelines in the preparation of our ESDM.

THE PRESIDENT: And is the emissions
summary table on the website?

MR. SNOPEK: Correct, it is, yes.

THE PRESIDENT: Anyone else for any
questions for the MECP?

So while you're on the phone, the sense we
got from the intervenor was that it's not easy to get
information, in fact it sounded rather dubious, the means

by which one had to get that. Can you comment on that, please, particularly around the ESDM, which is now on the website? And I think even the ECA there was some question around how easily accessible that was.

MS ORPANA: Sure. Good afternoon, it's Nancy Orpana, I'm Air Compliance Engineer with the Ministry of Environment, Conservation and Parks, so I can answer that question for you.

The company has environmental compliance approval issued by us and a requirement of that ECA is that the emissions summary table is posted by the company or made available to the public.

As far as the whole emissions summary dispersion modelling report, that would require an information request by the public to get access to that.

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

Okay. Our next presentation is by Ms Wendy Fischer, as outlined in CMD 20-H2.210.

Ms Fischer, over to you.

CMD 20-H2.210

Oral presentation by Wendy Fischer

MS FISCHER: Thank you.

My name is Wendy Fischer. This is quite an opportunity. A lot of work has gone into this, including French translation. I will just say -- speak briefly in the French.

Je suis une professeure, une enseignante à l'école Prince of Wales. J'enseigne un programme d'éducation physique, la santé, la danse, le drame, l'art visuel, un peu de musique aussi. Mes élèves ont cinq ans à 12 ans. J'enseigne là depuis 2002, alors, 18 ans à peu près, et c'est probablement parce que j'enseigne à Prince of Wales que je suis au courant de toute la situation.

Je pense que, à Peterborough, de plus en plus, il y a plus de personnes qui sont maintenant au courant, mais c'est vraiment une expérience depuis, pour moi personnellement, les derniers quatre mois. C'est peu de temps.

I will continue in English to say that this has been quite a four-month learning curve for me and I'm sure I'm not alone in Peterborough.

But just to share a tiny bit of my background, I always did perceive that there were important things going on in the GE facility because, prior to my birth, my father completed his engineering co-op at GE in the mid-sixties and was hired to stay on and worked in the nuclear engineering office for those 20 years and was very involved. I was able to speak with him over the weekend and hear more about things that weren't shared with me at the time.

He was involved in the design of the nuclear facility in Karachi, Pakistan. So I really wanted to hear his perspective and he did explain to me the importance of understanding that it's not enriched uranium, that it's naturally occurring uranium. And he also was explaining to me the number of years that go into the safety studies and the results. It takes two years to produce a safety report, so my experience of this process is kind of raising questions for me.

And I guess, too, he would say things like, "Just because an accident hasn't happened in the last 50 years doesn't mean that an accident might not happen."

And another thing that he mentioned that I'm reflecting on is that the CNSC is doing due diligence

on their jurisdiction, but he said, as someone who has been involved in the industry, that there are so many health and safety concerns that might be outside of their jurisdiction.

So I want to understand more completely how a licensing process takes place which grants the licence, and yet, there could be so many other health and safety factors, community preparedness factors that aren't sort of determining a yes or no in that process of the granting of the licence. They seem to be such essential parts of the health and safety of workers in the community, and yet, they aren't comprehensively involved in what becomes a licensing Commission report and green light go ahead.

So a little bit more about my background is simply that I do have very current ongoing and close friendships with current staff of BWXT and so I would like to think that I maintain -- want to maintain, intend to maintain a balanced perspective on the importance of these livelihoods, the importance of the role of the unions that I became more informed of today.

At the same time, I am personally aware that just as I have many questions going back decades about

what really is happening in there, and I have spoken with fellow community members who have actually said, "Well, I had no idea that there even was brazing with beryllium for the past 25 years." I can't even say the exact number, but it has been a long time that those processes have been happening. But you can be intimately in a family and have really no idea of what is actually happening.

And also, I'm not sure even to what extent the very dedicated and busy workers and employees have full understanding even of everything that is going on.

So I did actually go like to GE. When they had a wellness day, four or five years ago now, I went in on that tour, but my experience of that -- and I hope this is helpful to BWXT. My experience of that was that this was almost like a once-in-a-lifetime opportunity. In the 52 years that I have lived in Peterborough I have never been invited to walk past that threshold of the gate and it was a very informative tour.

But my experience as a teacher 18 years at Prince of Wales is that any hint of the chance that there could be an opportunity to know more, visit, certainly that has never appeared to me as being an option. And in fact, just in terms of my ongoing friendships, my experience

would be that, well, you can come to my workplace -- because I work across the street -- but boy, I sure never could ever, you know, set foot over there. In fact, until recently -- I mean until my mid-life, I actually thought that there was some military connection to what was going on and that's why I wasn't able to know because of security clearance.

And just as an aside, I really still want to know what this connection is with the Ohio school and finding uranium dust. I heard the answer and the answer is that we in Canada can't know because we don't have security clearance to know that information. But I would sure like to know a little bit more because that is definitely -- if BWXT is interested in repairing trust, that case is definitely -- it's resonating in the imaginations right now of a lot of community members. Like what did happen at a school in Ohio? The school was closed down.

So what you have at Prince of Wales currently -- and I can give you very update information because I just received a text -- the way teachers are feeling, first of all, number one, they were very uninformed.

I also go to the barbecue that is there.

We are made aware that there is a barbecue. We are very grateful for all of the financial and various volunteer activities that have happened by BWXT and formerly GE employees that have enhanced our school playgrounds, building of sandboxes, building of -- painting on our schoolyard, but I would have to agree with something I heard previously. When I attend the barbecues, the attendance is not high.

And when I attended the Evinrude information session -- I will share my experience there -- it was that visually the displays were very informative and there was an amazing number of staff and at times it felt that there were more staff present in the room than actual attendees. That may not be correct, but I was there for about an hour.

But my other experience that didn't leave a good feeling for me was that when I asked questions that I genuinely wanted to know more about at particular stations, I was more than once, in fact each time, directed to one person who was in the room, and I believe that person is in the room today. But it seemed almost more of a PR rep was the only person that I could have that kind of question answered by. And they were pretty basic questions

because at that point in time -- it feels like a year ago -- I wasn't that informed.

So I'm not sure that -- I mean, I think my own experience would indicate that there is a lot of work to do in terms of how a community member who is pretty actively attempting to be informed and the actual experience that I have in my attempt to be informed, that there is not a good connect right now.

So 80 -- did I mention 80 percent of the staff at Prince of Wales, that is approximately 60 to 70 people, have reached the point that they have chosen to add their signature to the petition that was read out today. So that's just in the last few days. So this whole process is definitely building momentum.

But I would just like to add another little part of my background is just being very proud of the commitment of Peterborough residents around issues related to location. And I'm smiling because I'm kind of proud that Peterborough citizens have actually convinced decision-makers that it wouldn't be a good idea to locate certain things in certain locations.

People from Peterborough know this history, but just a short rundown is the Friends of Jackson

Park and all the community groups that collaborated with them -- and they had a lot of scientists contributing their time, with requests from the Ministry of the Environment for more environmental assessment -- the Parkway Bridge that was going to go over a local park, Jackson Park, isn't happening. And that's a long, decade, two-decade long process, but essentially to this point City Council will not permit the construction of a very large bridge over top of a sensitive and often-used park.

Second, there is a casino that is now located on the exit to the 115, but there was the decision or the option to have it located downtown. Peterborough residents rallied around that opportunity to be consulted and that casino was not built in downtown Peterborough.

And there was also a hotel resort proposed as a downtown tourism initiative to be located on the shores of Little Lake, the Little Lake that is in the middle of the town, and that has not gone ahead.

And actually, I just remembered another one. Sensitive wetland on the Trent University property where it was proposed that there would be a twin pad ice arena, that is also not happening.

So I have heard at all the meetings --

because I have been attending the meetings -- that the likelihood of the licence being granted is good, but it's really important for us to do this work because it's not over yet and in two years or five years or 10 years or however long this licence is -- and, by the way, I really hope it is two separate licences and that it's shorter. But I also hope that there is that delay, that sort of postponement of either the licensing process or the decision to have pelleting added to it.

Is my time up? Okay.

If I can say one final thing, there's a lot of tentative language. Just quickly, there is a lot of, "We are adding those requirements", "Well, we are going to do that in the summer", "that process is in progress", "we are in the midst of". It's disturbing. I would like to hear that kind of language one or two years before we're at this point.

I would like to know that those important things -- I think the public has almost the sense that our contributions here are actually in an immediate way this week adding requirements to important safety documents. We have only had a few months to get up to speed on this. Transparency is not there yet.

And the consultation with indigenous groups. I work closely with indigenous organizers in the city and they haven't had an opportunity to share with me that they have been adequately invited.

And I just want to point one last thing. To say "interested indigenous groups" in the report that BWXT -- that we are consulting with interested indigenous groups, I find that concerning, because immediately it's a red flag. I do not know how or why a determination of an indigenous group who was interested or not interested, why that would even enter into things.

You need to do the work and a lot of the consultation and community consultation, community inquiry, that takes a year to set up. I think we all know that.

So BWXT is managing risk, CNSC is assessing risk, you are judging risk, the public, we are scrutinizing the risk because we are the legacy of the risk. Thank you.

THE PRESIDENT: Well, thank you very much, Ms Fischer.

--- Applause / Applaudissements

THE PRESIDENT: Dr. Berube...?

Dr. Lacroix...?

MEMBER LACROIX: Yes, I do. Thank you.

Madame Fischer, je vous remercie de votre témoignage.

MME FISCHER : De rien. Merci.

MEMBRE LACROIX : Vos élèves ont beaucoup de chance d'avoir une professeure aussi calme et pondérée. Je les envie.

MME FISCHER : Je suis une des fiers professeurs de Indie Bennett. Alors, oui.

MEMBRE LACROIX : C'est bien. Et je souhaiterais maîtriser la langue de Shakespeare comme vous maîtrisez la langue de Molière.

MME FISCHER : Merci beaucoup. C'est un grand compliment. Merci.

--- Laughter / Rires

THE PRESIDENT: Dr. McKinnon...?

Dr. Demeter...?

MEMBER DEMETER: Thanks.

Thank you very much for the presentation.

I have two questions on the indigenous consultation and engagement portfolio.

You might not have been here before. We did talk about the indigenous groups that were contacted

and, as I understand it, and it can be confirmed, the issue of interest was from their end. So they were all contacted and some declared that they did not have a specific interest in participating. Is that correct, CNSC staff?

MR. LEVINE: Adam Levine, for the record.

Yes, exactly. That's it. We always take an approach that for any licence application such as this that we do an assessment of the indigenous communities who could be affected or would be interested in this type of process and then we inform them. Then it's up to each individual community to come forward and participate, and we encourage them and provide the necessary tools like participant funding, et cetera, to make sure they can get involved and have their concerns heard directly by the Commission, who is the agent of the Crown and ultimate decision-maker on those aspects. So yes, it is basically the interest on their part to get involved once contacted.

MEMBER DEMETER: Thank you.

I wrote this out so I get the right language. But the second question for staff, based on the section in your CMD on indigenous consultation and engagement, I want to confirm the staff position that the CNSC as an agent of the Crown has discharged its duty under

section 35 of the Constitution.

MR. LEVINE: Adam Levine, for the record.

So to back up, in order to understand first the legal duty to consult and that framework, the Supreme Court has been very clear on what that constitutes. So the legal duty to consult is engaged when there are Crown decisions such as a licence decision from the Commission and that decision could result in potential impacts on the exercise of indigenous or treaty rights.

So what we do as staff is anytime we get a licence application we do an assessment, look at the existing or potential indigenous rights in the vicinity of a potential project or activity and look at what the licensee or proponent is proposing.

So in this case they are looking to primarily renew their operations here and ask for the flexibility to conduct pelleting here, which is currently done safely in Toronto at their location.

So when we looked at all the assessment analyses, which we have talked at great length here, from our specialists and different folks, we determined as staff that the addition of pelleting and the ongoing operations would not have a negative interaction with the environment

and would not impede any existing or ongoing use of indigenous peoples, of their lands and territories for traditional practices as protected under the Constitution.

So our assessment was that this particular decision would not raise to the level of a legal duty to consult. However, as per all licensing processes, we follow the same robust process where we reach out to communities early on, as I talked about yesterday. We ensure that they are informed, engaged, with the information they need.

I think we heard yesterday we have a little more work to do there to make sure it's very clear exactly what is going on here and the risks, and we have made commitments to do so and we have heard BWXT commit to do so. We have a lot of expectations of the licensee, as it's their operations, to clearly explain what is going on and what they are planning to do if they do get a licence to do so from the Commission.

From our perspective, yes, it's ultimately up to the Commission to make that decision and determination, but from staff's perspective we have met that obligation if it did exist, which our assessment is that the legal duty was not engaged for this particular

application. But the Nations were here yesterday to express their concerns directly to the Commission, which is a very important part of the consultation process.

MEMBER DEMETER: Yes. Thank you very much.

THE PRESIDENT: A question for staff.

One of the comments made by the intervenor was the scope of the CNSC's review and assessment around health and safety of workers and public and that the CNSC may not cover the full spectrum and that there may be other regulators involved. So just clarify that what is being presented to the Commission actually does cover the full spectrum.

MS TADROS: Haidy Tadros, for the record.

Absolutely, it covers the full spectrum of health and safety. While we heard of the Commission's role and staff's role in the licensing process, and as my colleagues have identified, with the application of a licence that uses radioactive material, which squarely puts this file within the purview and the mandate and the purposes of the Act in front of the Commission, we work with other jurisdictions to ensure that permits are in place to ensure that reviews are done.

I would ask our environmental protection specialist to perhaps give an example of how we interact with other federal agencies when it comes to species at risk for example on certain files not pertaining to BWXT, but it might help give the full spectrum of we are the responsible authority under the Act to maintain the regulatory oversight but also within our licensing process include these other agencies as well.

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

So, as Ms Tadros says, we do work collaboratively with other regulators and in some cases we have these enshrined in Memorandums of Understanding. We have those with Environment and Climate Change Canada, Fisheries and Oceans Canada, Health Canada, Natural Resources Canada. I might be missing a few, but the first two maybe I will put a little bit of focus on. Those are the ones that we do a lot of work with them.

With Environment and Climate Change Canada, Ms Tadros mentioned species at risk, and so we work with them when we are -- for example, for new projects which may have the potential to impact species at risk. We would, through that Memorandum of Understanding, get them

involved through the Canadian Wildlife Service for example to provide that advice and support on potential impacts on those species.

Likewise, with Fisheries and Oceans Canada, that Memorandum of Understanding is a little bit different. We are doing some of the work that they would do to be more efficient as a regulator as a whole, but certainly if there were fish-related matters we can draw upon their expertise to complement what we have in-house.

So yes, a lot of collaboration happening. Whether they have a regulatory role or they may even have an expertise role, we draw on that to get the best advice and send those recommendations forward to the Commission.

THE PRESIDENT: Thank you very much.

Ms Fisher, any final comments from you?

MS FISCHER: Yes.

I wasn't here yesterday. Someone who was had said that they are concerned that the Chief of Curve Lake and the Chief of Hiawatha both asked for the licensing process to wait until authentic or more comprehensive consultation has happened. So for me, that's important and I'm going to be watching for that.

And secondly, my last comment would be I

would really like to see evidence of genuine investigation and feasibility study of an alternate -- several alternate locations for this new processing plant, the pelleting part. That for me would constitute justification if it could be proven that no other site was better and provided less risk to populations. I'm not anticipating that, but that would be what would constitute justification for the licensing to happen there.

THE PRESIDENT: Okay. Thank you. Thank you very much for your intervention.

Our next presentation is by Mr. Graham Petty and Ms Rachel Petty, as outlined in CMD 20-H2.99.

Over to you.

CMD 20-H2.99

Oral presentation by Graham Petty and Rachel Petty

MS PETTY: Thanks so much.

Before we start, my partner Graham and I wanted to take the opportunity to acknowledge that we are meeting today on the traditional territory of the Mississauga Anishnabeg people along the shores of the Otonabee River, the river that beats like a heart, and our

hearts beat back in gratitude for their stewardship of this land, for their relationship with the plants and the creatures and the waters since time immemorial.

Also, when I practise land acknowledgment in the city of Peterborough, Nogojiwanong, "the place at the end of the rapids," I'd like to take the opportunity to acknowledge the 6,000 urban Indigenous people that make up representation from nations across Turtle Island who live here. So I want to take this opportunity to just anchor us in this place in a good way before we start our presentation.

We're all here on good authority. You are here with a specific and detailed scope, and we are here with a broad and general scope and our expertise as citizens of this community who have a right and a responsibility to consider the generational health and wellness of our children as well as the land that we live on and grow food on, the water that we swim in, catch fish from, and drink.

To me, this comes down to meaningful engagement and informed consent. And so to demonstrate that, I'm going to ask Graham if I can throw this brain-shaped squishy ball at him.

Graham, can I throw this at you?

MR. PETTY: Please don't.

MS PETTY: Why not? This squishy ball is a hundred per cent guaranteed not to cause any harm.

MR. PETTY: I think I want to know more about that before you throw it at me.

MS PETTY: I'm an expert. I went to brain-shaped squishy ball school.

MR. PETTY: I'm still not comfortable with it. I'm concerned. I need some more reassurance.

MS PETTY: To me that is the crux of the issue here. The social contract that allows BWXT to continue business as usual is at an impasse.

We need more time, just as the chiefs of Curve Lake First Nation and Hiawatha First Nation requested yesterday, to have our informed consent be earned and for our community to decide that we can move forward with the granting of this licence in a good way that recognizes the impact on our children and our children's children, particularly the impact of exposure to these substances on the bodies of children in terms of their lifespan but then also the lifespan of any of our grandchildren or their grandchildren.

We've heard a lot of research about the impacts of exposure on workers. And I would like to know about the impact of exposure on children for generations to come. So I think that for me, that's the crux of the issue. I can't argue with you on the scientific details.

We come to you today as busy people who live in a complex world where our community, despite our strengths and our resilience, are faced with challenges related to housing crises, income security crises, opioid crises, overdose crises. We are working hard every day.

We are taking time from our lives to be here in front of you. We had to pay someone to pick up our children today, even though over the last many months we have been impacted by labour disruption at the schools where we've also had to spend time and money organizing child care. This is important to us, and we are here doing this work because we value it.

And for the 250 people that have gathered before you, there's another, you know, 2,500 people who are unable to be here because this process is inaccessible because our lives are complicated, because we are already trying to collaborate to address challenges in our community.

And we request that you honour our commitments and obligations as treaty people and respect the request the chiefs put forward to you yesterday, and that you grant us more time and that you earn our informed consent.

MR. PETTY: So I'll just add to that, that the intervention that we submitted in writing, it focuses on informed consent and on the toxic burden in the community for generations to come.

But I also want to say that I'm really humbled by the experience of witnessing this committee. I've been watching it on the webcast and it's riveting, surprisingly.

--- Laughter / Rires

MS PETTY: Even our kids.

MR. PETTY: Yeah, our kids wanted to watch it. They thought it was really good -- yeah.

--- Laughter / Rires

MR. PETTY: Oh, we're squeezing it in and enjoying it.

And when I say I'm humbled, it's also a bit intimidating. The professionalism of the BWXT and CNSC staff is apparent. The engaging and thoughtful way that

the Committee Members are conducting it is also apparent.

I'm also humbled and inspired by the intervenors, people like Jenny Carter and Faye More, who I saw in webcasts, who shared knowledge and wisdom gained from years of experience and information speaking out against the nuclear industry, and by all the intervenors, really, whose passion has driven them to bear the burden of proof against teams of professionals whose employers have invested vast amounts of time and money into supporting their positions, and whose courage has driven them to arrive here and face down that imbalance of power. It's amazing that we have so many people that have come forward.

This is not an accessible venue. As my wife said, I mean, for each of us that come and speak here and have the language, the awareness, the access to technology, reliable food, housing, transportation, and so on, there are members of this community that are too busy and disconnected, disenfranchised to even think about it. And yet these people could also bear the toxic burden, the consequences of uranium pelleting for generations to come. Their children could bear that burden.

I want to talk a little bit about how we live too, which is one of the reasons that I feel

concerned. We truly enjoy living on this land, this Mississauga Anishinaabe land. We swim and fish in the river. We grow food. We walk, we ride bikes. We tap maple trees to make syrup and harvest wild leeks in the spring and apples in the fall. We bring our kids along and do this stuff with our friends, and we want them to do these things moving forward. We want them to pass it along to their kids.

I'm an outdoor educator, amongst other things, and I know that children express their humanity very naturally by engaging with the natural world with their full senses. They splash in puddles and eat snow and eat dirt. They taste the food that's growing in the garden. And I just imagine, the Prince of Wales Schools has garden boxes in front of it, and the kids are encouraged to eat that food because it's empowering for them, it's healthy, it promotes food security.

And I think that whatever reassurances can come from this, I think, we'll still live with the awareness of risk if there's uranium pelleting because we engage in these activities. And I don't know how -- I guess we trust in you to assure us that that's safe, that we can live that way, that we can eat the dirt ourselves if

we choose to and continue to grow our own food and encourage our kids to do that with us. And I think that concern is valid. I don't know if you would advise me against feeling concerned about that.

Emissions from uranium pelleting, from what I understand, they pose actual risks. That's not potential risk; it's real health risks. They can be limited, but not eliminated. And history shows that accidents happen. So where will the toxic burden of uranium pelleting sit for future generations and for us? And to use Faye More's words, what nasty surprises might await us in our future? I think these are all important questions to consider.

I think that -- I won't go through the things -- like from watching this, I've seen that there have been moments where there seems to be some uncertainty and some doubt, where there have been moments where it looks like -- I can understand why BWXT would be defensive, but there's moments where it seems like even the CNSC is unsure, defensive about some of the concerns that have been raised.

So it just leads me to want to say it. Like there are no infallible facts. And what is the

threshold for doubt? What is the point at which we say there's too many unanswerable questions to responsibly move forward with this application for licence renewal?

And I'm out of time. I have a couple more questions. I can do it after if there's -- okay.

So just some questions that I wanted to pose:

What are the implications for CNSC Committee Members and staff if they deny this application? Just speaking in reality, would this be acting against precedent? Would there be consequences for individuals or for the regulating body if they chose to uphold the wishes of a bunch of intervenors in Peterborough against a multi-million-dollar industry giant?

Alternately, what are the implications of granting the request, having heard our presentations? Who is accountable when voices are silenced, when calls for a halt for deeper consultation and informed consent are ignored?

The intervenors that have come here have collectively drawn a boundary. We're saying we don't want the licence renewal; we want consultation with the community and First Nations to honour treaty obligations.

We think BWXT is in a location unfitting for their operations. What are the consequences when this many people try to hold a boundary and it's crossed?

And then finally, I find it troubling to hear that the feelings of the community don't matter to this Commission, only the facts are being weighed. I believe there is some uncertainty in the facts, so that leaves some room for a moral decision to be made. And with the great wealth and knowledge of all the professionals and experts here, I still wonder where does the moral compass lie. Whose responsibility is it to make a choice that's fair and reasonable to us?

THE PRESIDENT: Well, thank you very much for your submission. And before I open it to the questions, I think your two questions on what are the consequences of either denying or granting -- clearly up to us five to make that decision individually. We don't even have to make it collectively. And that's what we've been empowered to do, and that's what we will do.

And in either case, what are the consequences? Well, if there's any party that thinks we didn't make the right decision, they can always appeal it and there will be a judicial review of that.

But that's what our job is. And it's not just facts. There's always judgment involved. As you yourself said, there are multiple facets and aspects and perspectives that we need to consider.

So with that, we will start with Dr. Lacroix.

MEMBER LACROIX: Mr. Petty, Mme Petty, thank you very much for this very entertaining intervention. I really enjoyed it.

I don't have any question, because your written submission is clear and your presentation was excellent, so that does not mean that I do not hear your message. It's loud and clear and it will be taken into account, rest assured. Thank you.

THE PRESIDENT: Dr. McKinnon?

MEMBER MCKINNON: Yeah, thank you. I think you raised a lot of very good points, and you know, referred to the complexity of the decision that has to be made.

And I also enjoyed your very good demonstration. I think it made the point very well with the squishy grey matter. And I think to take that a bit further, if you're considering whether to give you a

licence to do that, that squishy grey thing would be very carefully analyzed, sampled, and you know, baselines would be established by all the scientists until they were very thoroughly convinced that there will be a low probability, you know, it would be very safe for you to throw that. And at this point, not having done that, we would not grant you a licence to do it. So there's a very complex and long, thorough process behind that. And I hope through the hearing, you know, that some of that process has become clear.

But I have no further specific questions, but thank you very much.

THE PRESIDENT: Dr. Demeter.

MEMBER DEMETER: Thank you very much for your presentation. I particularly liked being sensitized to the fact that for each intervenor that shows up, there's an army behind them, perhaps, so to keep that in mind. And so thank you very much. I don't have any specific questions.

THE PRESIDENT: Dr. Berube.

MEMBER BERUBE: I think we're all feeling a little spongy brained right now, so that was a really interesting demonstration. Thanks for that. After five

days of this, it's wearing on all of us. I think it's wearing on all the intervenors too.

But thank you for illustrating the fact that people actually watch the webcast and might actually be interested to some extent. That's kind of nice to know. Otherwise it would be wasted money. And if people are watching it, it's a good thing.

These decisions are not easy because there's always hard choices to be made. And I think you know that. I know you know that, actually, because you have to make hard choices with your own family, you know, to expend money to come here and do this, to take the time and energy to do this. It's a big family commitment to do that.

I can assure you that the people in this room are just a small percentage of the people that are actually looking, examining, and evaluating all this stuff. There's literally hundreds of people in the background that are actually looking at this. And all of them are highly qualified, highly competent.

Our job up here is to make sure that we're making a balanced, reasonable decision to support everybody's security, safety, protection of the

environment. That's exactly what our mandate is. We can't deviate from that. We have to make a decision that's based in that, because that is what the Crown wants us to do, and that is clearly what we're here to do. So we're not going to make a decision that's unsafe. It's that simple, okay.

THE PRESIDENT: Thank you.

Any final words from you?

MS PETTY: Yeah, I really appreciate your acknowledgement of my -- our -- amazing squishy ball activity. And I just want to say that if you have hundreds of people looking into whether or not throwing this squishy ball is safe, and you can thoroughly prove and test and assure me that it is, you still need my consent before you throw it at me. And so that's the point that we're making here.

We're asking you to slow this process down. We are not providing our informed consent in terms of the location of the granting of this licensing. And we are at an impasse. So we need more time. Thank you.

THE PRESIDENT: Thank you very much for your intervention.

Our next presentation is by Mr. Peter Woolidge, as outlined in CMD 20-H2.220.

Mr. Woolidge, the floor is yours.

CMD 20-H2.220

Oral presentation by Pete Woolidge

MR. WOOLIDGE: Thank you.

Firstly, thank you President Velshi and the CNSC for hosting these interventions.

I am addressing my concerns regarding security in two specific categories. Firstly, BWXT's safety history in the United States as a background check, so to speak, and secondly, potential sabotage of the facility.

Firstly, BWXT's safety history in the United States. In an informative online site called wise-uranium.org, I found a list of nuclear activities and incidents in the industry in the US that were addressed by the US Nuclear Regulatory Commission, the NRC, I'll call it from now on.

From this list, I found that from February 2004 to March 2019, the NRC had identified 20 violations of criticality safety procedures and five violations at the BWXT nuclear fuel plant in Lynchburg, Virginia, one of

which involved an "unplanned fire."

Also at the Lynchburg plant there was an alert issued because of an accidental discharge of highly enriched uranium:

"On July 15, 2009, company employees failed to declare the emergency for more than two hours."

In another incident in the Lynchburg plant, the NRC cited BWXT for "inoperable criticality monitors" -- that's April 6 through May 17th, 2003. Six detectors had failed.

In the Three Mile Island incident, while the plant operator, General Public Utilities Nuclear Corporation, held much of the responsibility for the catastrophe, it was BWXT's reactor that was:

"...fraught with problems from the beginning. Starting in 1979, Unit 2's coolant system leaked at rates that frequently exceeded allowable NRC limits." (As read)

That's from the *Washington Post*.

And more recently, the contaminated school in Ohio that was mentioned by Wendy.

A most recent incident involving BWXT occurred just last year in Pike County, Ohio, when Zahn's Corner Middle School, a school housing 300 students and located two miles from the plant, suddenly closed on May 13th, 2019. The facility, Portsmouth Gaseous Diffusion Plant, had expelled radioactive materials into the environment. The companies responsible for the contamination, which includes BWXT Conversion Services, as well as Fluor-BWXT Portsmouth, through their silence and aggressive public relations efforts, misrepresented that their uranium enrichment operations did not contaminate the surrounding community, the case says.

The companies -- who were variously responsible for the plant's building operation, hexafluoride conversion work, and eventual environmental radiation efforts -- have allegedly attempted to mislead and misrepresent the nature of the materials being expelled into Pike County. As a result of the defendants' actions, the plaintiffs claim, Pike County residents have been exposed to radiation that can cause gravely serious biological effects.

From the suit, the injuries resulting from exposure to ionizing radiation can also be separated into

two categories, somatic injuries and genetic injuries.

Somatic injuries are damages to the individuals exposed. These include damages to the skin and reproductive system, blood-forming system, digestive system, central nervous system, and immune system as well as cancers. Illnesses such as cancers may take a number of years to appear.

Research shows that uranium has a high chemical affinity for DNA and causes genetic damages to individuals, resulting in birth defect outcomes and cancer at levels much, much greater than previously modelled.

That concludes that section of it.

Now, the potential for sabotage at the Peterborough BWXT facility. Since the attacks of 9/11, there's been a call for vigilance in the protection of our infrastructures and especially of our population. We must consider any nuclear facility to be a potential target for terrorists. These factories and plants need to be extremely well guarded and monitored.

Here's an excerpt from an article written by Hugh Gusterson, titled "How the Next Nuclear Accident Could Happen," from a publication called *Bulletin of the Atomic Scientist*, covering security at the H12 National

Security Complex in Tennessee.

"We can learn a lot about the potential for safety failures at US nuclear plants from the July 29th, 2012, incident in which three religious activists broke into the supposedly impregnable Y-12 facility at Oak Ridge, Tennessee, the Fort Knox of uranium. Once there, they spilled blood and spray-painted 'Work for Peace, not War' on the walls of a building housing enough uranium to build thousands of nuclear weapons. They began hammering on the building with a sledgehammer and waited half an hour to be arrested.

If an 82-year-old nun with a heart condition and two confederates old enough to AARP members could do this, imagine what a team of determined terrorists could do?"

(As read)

They managed to penetrate the facility

using bolt cutters and a flashlight, cutting through four fences in all. This "was supposed to be the most tightly secured uranium processing and storage facility in the country."

At that time, it was Babcock and Wilcox -- that's the B and W in BWXT -- who were responsible for the maintenance and the security equipment at the Y-12 site. The trio had managed their feat because sensors and cameras had not been repaired.

Y-12 continues as the world's largest repository of highly enriched uranium, HEU, in metal form, storing approximately 400 metric tonnes of the material, enough for about 14,000 nuclear war heads. Also Babcock and Wilcox had re-opted for a cheaper design for their highly enriched uranium materials facility at the Y-12 complex. This resulted in "a more vulnerable above ground building." Apparently BWXT really puts the "facility" in facility.

Another accident occurred at the Y-12 complex in February of 2003 when a "small explosion breached its glovebox, allowing air to enter and ignite some loose uranium powder." That's from Parson P., 2004, I believe it's June 11th or perhaps November 6, I'm not sure

which order they put the date, "BWXT Y-12 Fined for Explosion," from *The Oak Ridger*.

Hydrogen gas is required in the pelleting process. The tank of hydrogen at BWXT Toronto contains an immense amount of hydrogen, which we know is very explosive.

Yesterday, our local fire chief stated that the risk assessment is high. Hundreds of hydrogen incidents have occurred in various industries, including BWXT in Toronto in January of 2017. Many of incidents have been devastating. In Hanau, a town near Frankfurt, Germany, in 1991, they had a major incident involving a hydrogen tank rupture. This tank is probably 25 per cent larger in size than the one I noticed in the Toronto plant. "The explosion resulted in severe damage within a radius of one kilometre." That's a diameter of two. That's from "Safety Considerations on Hydrogen," Karl Verfondern, 2008.

Bearing in mind that uranium dioxide powder and highly explosive hydrogen are used in the manufacturing of these pellets, should it not be stored somewhere far from a residential neighbourhood and public school? Somewhere far from a town? This process would provide an unnecessarily convenient dirty bomb to

malevolent saboteurs.

I am requesting that this licence renewal, allowing pelleting in Peterborough, not be allowed.

Thank you.

THE PRESIDENT: Thank you, Mr. Woolidge.

We will take a break before we get to the questions, because I may have a mutiny on my hands otherwise. So we will resume at quarter to four, please. Thank you.

MR. WOOLIDGE: I would just like to say in closing I would like to thank the Commission for allowing us to share noble ideas as best as we can.

Do you guys have any questions for me?

THE PRESIDENT: Oh, so we'll take a break and come back to ask questions --

MR. WOOLIDGE: Oh, you're going to ask me questions afterwards?

THE PRESIDENT: Oh, absolutely.

MR. WOOLIDGE: Oh, okay. All right, yes, thank you.

--- Upon recessing at 3:27 p.m. /

Suspension à 15 h 27

--- Upon resuming at 3:44 p.m. /

Reprise à 15 h 44

THE PRESIDENT: We are ready to resume the hearing, if you could please take your seats. Thank you.

Again, Mr. Woolidge, thank you for your submission. We will open it up for questions, starting with Dr. McKinnon.

MEMBER MCKINNON: Thank you. You raised a number of important points.

I would like to just pursue the terrorist activity aspect.

My question to BWXT: I believe there was some assessment of the terrorist threat in the risk assessment, and in searching that I was just curious. What were the incidents of terrorism for natural uranium versus enriched uranium sites?

I think it's very important to distinguish between the two.

MR. MacQUARRIE: It's John MacQuarrie.

I'm sorry, could you clarify that question? I'm not sure I understood what you are asking.

MEMBER MCKINNON: When you were estimating

the terrorist threat in your risk assessment, that was for your facility which is for natural uranium. So the number is very low.

But when you were investigating that, did you find that the incidents of terrorism were almost entirely or exclusively for enriched sites? Was there any information on that?

MR. MacQUARRIE: It's John MacQuarrie.

I don't think we looked at that, to be honest with you. I don't think we can give an answer unless Mr. Snopek would like to add something.

MR. SNOPEK: Dave Snopek, for the record.

From a security perspective, we didn't do a comparison. We have a security program. We have a threatened vulnerability assessment for our facility, and we looked at our facility in that assessment.

MEMBER MCKINNON: Yes, that's all I expected you would have done, but I was just curious while researching that if you just happened to see any of the other data.

THE PRESIDENT: Dr. Demeter.

MEMBER DEMETER: Thanks for your presentation. I don't have any questions.

THE PRESIDENT: Dr. Berube?

MEMBER BERUBE: So obviously we have to talk about your issue with security. It's part of the licensing requirement.

I want to remind everybody that this is an unclassified session and that anything that we say cannot exceed the classification of the session. So we are going to keep it nice and general.

BWXT, if you would just quickly go over the things that are unclassified that people can actually see from outside the perimeter.

What facilities do you have in place to limit sight to the site access and to monitor the actual site itself?

MR. MacQUARRIE: John MacQuarrie, for the record.

So here in Peterborough we have a facility that has a perimeter fence. It has security guards on the site 24 hours a day. They monitor all traffic personnel and vehicle traffic on the site. There are camera systems and things like that. I won't get into more detail on that.

The personnel entering the site are

accessing through a gate that is controlled access, and there's vehicles entering through a vehicular gate with controlled access through that.

MEMBER BERUBE: CNSC, obviously you have to inspect security as being part of one of SEAs for this particular site. Is everything in accordance with provisions of our REGDOCs and would you be willing to attest to the fact that the site is secure?

MS TADROS: Haidy Tadros, for the record.

I will pass this question to our nuclear security experts in Ottawa who have reviewed BWXT's program.

MR. TENNANT: It's Richard Tennant, for the record, Director of the Nuclear Security Division.

BWXT, they use natural uranium so it's just important to point out. I know we had the conversation about the Y12 incident in the United States but that was for highly enriched uranium, which this facility does not use.

Nuclear Security Regulations identify Category 1, 2 and 3 nuclear materials, which are not natural uranium. So Part 2 of the *Nuclear Security Regulations* is what BWXT complies with, and they have a

security program and security measures to meet those requirements of the Regulations.

MS TADROS: Haidy Tadros, for the record.

I may have misdirected, as well, just in terms of information specifically for verification and inspection.

So perhaps either Mr. Julian Amalraj or Mr. Tennant can speak to the actual inspections that we conduct to verify that everything is in order.

MR. AMALRAJ: Julian Amalraj, for the record.

I can confirm that BWXT is regularly inspected for the safety and control area of security and were inspected as recent as the third week of February, 2020.

MEMBER BERUBE: And as of that inspection everything was up to snuff?

MR. AMALRAJ: Yes. BWXT complies with all the requirements under the *Nuclear Security Regulations*, Part 2.

MEMBER BERUBE: Thank you.

THE PRESIDENT: Dr. Lacroix?

Okay, Mr. Woolidge, you can now make your

final comments.

MR. WOOLIDGE: I would just like to mention that although it's not the same type of uranium that is stored on the site, it is certainly a very convenient dirty bomb available. I would feel much more comfortable if such a facility weren't in the middle of a city.

So that's probably my strongest comment that I could say at this point.

THE PRESIDENT: Thank you and thank you for your intervention.

Our next presentation is by Mr. Miles Johnston, as outlined in CMD 20-H2.222.

Mr. Johnston, over to you.

CMD 20-H2.222

Oral presentation by Miles Johnston

MR. JOHNSTON: Thank you.

My name is Miles Johnston, as you just said. I grew up in Peterborough, just a few blocks away from GE and BWXT. I attended Prince of Wales School and I recently purchased a house on Wolfe Street, and my son will

go to Prince of Wales School, as will a new child on the way.

I just want to take a minute to thank the Commission for hearing everybody out. You must all be really tired and ready for a beer or martini, or whatever is on the tab after this.

I also really want to thank CARN. They really helped a lot of people get here and get their interventions ready and made them aware of the deadlines.

I did actually get a flier from BWXT, or maybe from the CNSC, outlining the program. But it was just one flier. For someone like me, it wasn't quite enough to actually deliver reminders to a busy life to make it to the deadline. So thanks, CARN, for all your hard work.

I'm presenting last so I apologize. I've been here for two hours and I've heard that most of my arguments have already been gone over. So it's pretty redundant and I apologize for that.

I do feel like it's important for me to speak them again and that's my part here.

I should also say that I have no expertise for the subject, so my position is just to uphold the

chance to speak and to let you hear from the community that you are hoping to hear from.

I am a carpenter in Peterborough and the area. I work for Straw Works so on-site I occasionally deal with toxins and safety hazards, and I try my best to keep myself and other coworkers safe on the job. Simple example, safety glasses, air exhaust, negative pressure. I'm sure it's total child's play compared to the nuclear safety.

Anyway, just back to my own safety on site. The best approach is always for me to remove the risk, if it's a chemical or someplace you can fall down. Anything that can be removed should just be removed. That way no risk, no problem. If there's a risk, the first question I always ask is: Is there any way that we can get this risk off the job site?

So it's just a little bit confusing to me -- and maybe this isn't part of your mandate and it's been gone over a few times now. When I look across the street from me and I see BWXT, I just look at that and I say here's a risk. Maybe it doesn't need to be here. Maybe this is not the right place for this risk.

So my question for the CNSC is that if

processing nuclear fuel and equipment pose any kind of risk, why wouldn't you choose to remove it from this situation, maybe move it to somewhere where there is less or no immediate inhabitants?

Another question of mine is just about the facility on Monaghan Road. I don't know if it was built specifically for packing pellets or for processing uranium. It's not that old but it's quite old in some views. Many buildings in Peterborough have already been replaced in the time that this facility has already existed.

So much has changed in building science that often buildings aren't renovated but they are replaced because to reach the new levels of safety and efficiency, it's not achievable without returning back to the planning phase. And questions like that would just be, you know, proper air sealing and efficiency. Would that maybe reduce fugitive emissions? Would better grading and surface water diversion decrease the risk of contamination? The site is prone to flooding, as most of low land Peterborough is.

And the immediate property is city and private land. Would it not seem wise to have a larger buffer area around the facility to engineer better mitigation of natural events?

I'm sure this must also apply to the nuclear facility itself. I'm sure, you know, some of the workers and leaders on site would benefit and appreciate or have suggestions for a safer and more efficient work environment. It's possible maybe that operating in a properly updated facility would eventually increase BWXT's own bottom line.

So this question is for BWXT, and it's maybe a redundant question. Would you not potentially benefit and would you consider upgrading your facility? If you would, then is now the time? And if so, maybe a new location as well just to really give you the area and a chance to start fresh.

I would like to thank the Commission for holding the hearing here in Peterborough. That really made it a lot more accessible.

And I would like to thank your amazing staff and all of you for smiling and being welcoming. I just have to say that I find this whole process a bit intimidating, and I would like to point out that for myself this process requires resources and time I feel lucky to have. However, not everyone affected has this luxury. This platform is a very foreign place to me and I know that

for many of my neighbours and friends surrounding especially Wolfe Street this process is too foreign and too intimidating and requires too many resources, or they feel that their voice won't make a difference anyway.

All this is to say -- and you've heard it already -- please note that there are lots of people who feel they don't have the resources to come here and say what they might otherwise like to say or haven't submitted interventions.

In closing, my argument is that whether or not BWXT operates safely -- and I imagine that you do on a day-to-day basis -- the risk of catastrophe if an accident occurs is too great. It would be greater still if they are allowed to produce pellets as well on site. Obviously if everything goes to plan, everyone is safe. But once again, if the risk is removed or reduced, then if an accident occurs the damage is lessened. And if the damage isn't affecting the lives of innocent children and local inhabitants and it's out of town, then that's even better.

In closing, I just ask the CNSC remove this risk. Deny them the licence to operate this facility or at the very least reduce this risk by denying them or amend the licence so that they can't produce pellets on

site.

It sounds like it's you five that get to make the final decision. I don't mean to get too heavy but I just feel like I need to say it. Right?

On the record, like if an accident occurs in the next ten years and anyone is hurt, we are going to feel like this is kind of your responsibility. If you chose to move the facility and an accident did occur, a flood or a fire or what have you, surely you would feel some relief by having made the choice to move this facility or allow BWXT the chance to move this facility by denying them.

That concludes my intervention. Thank you.

THE PRESIDENT: Thank you, Mr. Johnston.

We will open the floor up for questions, starting with Dr. Demeter.

MEMBER DEMETER: Thank you for your intervention and presentation. As you said, we have had a long five days. We have discussed most of the issues you brought up, but it's nice to hear them from you.

I have no specific questions.

THE PRESIDENT: Dr. Berube?

MEMBER BERUBE: I want to thank you for taking the time to actually prepare and come and commit your resources, especially your time. It's the one thing that we can't recover. Once it's spent, it's spent. That's just the way it is.

So on behalf of the Commission, thank you very much for coming and intervening on behalf of your requirements and the community requirements.

I have no questions.

THE PRESIDENT: Dr. Lacroix.

MEMBER LACROIX: Thank you very much, Mr. Johnston, for your message. It's loud and clear. I like it when you talk directly to the Tribunal. It's what you think exactly. I can read your body language and I get a connection.

Thank you very much.

THE PRESIDENT: Dr. McKinnon?

Okay. Well, any final words, Mr.

Johnston?

MR. JOHNSTON: Thanks for listening.

THE PRESIDENT: Thank you very much for your intervention.

Our next presentation is by Mr. Zahir

Topan, as outlined in CMD 20-H2.223, 223A and 223B.

Mr. Topan, the floor is yours.

CMD 20-H2.223/20-H2.223A/20-H2.223B

Oral presentation by Zahir Topan

MR. TOPAN: Thank you.

I notice the gentleman had a couple of minutes left. I would be grateful if you extended that to me.

--- Laughter / Rires

MR. TOPAN: And to Dr. Lacroix' point, I would love to have spoken to you eye to eye, but this is my tenth iteration of my presentation and I just finished it at 1 o'clock. So I will have to unfortunately read from it. Thank you.

My name is Zahir Topan, Peterborough resident. Thank you for holding these hearings in our city. We appreciate your compassion, patience and understanding about the real risks as per your and our experts and the perceived risks by the community.

I watched the Toronto and Peterborough webcast and attended some of the sessions in Peterborough,

and I want to thank Louise for her help. Also thank you for all the intervenors expressing their concerns admirably, as it has been a steep learning curve for all of us.

And I would like to once again just thank Debra Rosen, who was also an intervenor, who helped me with my presentation.

I want to touch on the possibility of removing this nuclear threat from Peterborough and Toronto later in my presentation.

My family moved to Pickering and raised three children near the nuclear power station. That was an informed decision, being aware of the self-evident CANDU nuclear facility. Then I moved to get away from it five years later because it did stay in my mind a lot. I moved to Toronto's west end in 2002 for 14 years, totally unaware of the proximity of the BWXT facility.

I came to Peterborough in 2016 after looking at 38 towns and cities, which begins to convey the attraction of this beautiful city that I call my heaven on earth.

I knew of GE's toxic legacy from realtors, so I chose a house as far away as possible. Again I had no

idea that a nuclear facility was moving in or had existed there until this licence began to garner interest and trepidation.

BWXT's presence needs to be highlighted in the communities. For a corporation deemed so very safe, why the almost non-existent profile in both cities even when Toronto has a Community Liaison Committee?

CNSC should mandate a sign being placed below the corporation's building sign indicating CNSC Licenced Nuclear Facility, as it would be helpful in informing the public, especially by word of mouth in the community.

The CNSC are collectively responsible for our nuclear safety and you will determine the fate of our children and the public in Peterborough.

I humbly ask: Can you categorically say that our city will be free of a nuclear-related industrial accident? Many industries, including the highly regulated safe airline industry, would suggest no.

BWXT being so close to residents and school children is a recipe for disaster.

Experts say there is no safe level. Even low levels can be a health hazard. These particles are

invisible so emotional anxiety becomes a major concern when living close to a nuclear industrial site.

We cannot sleep well with the threat. I say this on behalf of our community because my sleep over this issue has been affected after learning about BWXT's presence.

This facility is negatively affecting our quality of life regardless if it is emitting or not emitting. We suffer emotional anxiety not knowing for certain if we have been affected and can only find out much later if it impacted us. An accident may be unlikely but why gamble our federal taxes, our money, and also disregard our future instead of insisting BWXT buy adequate liability insurance to ensure true compensation at the very least?

There is a \$48 million guarantee required for clean-up but nothing guaranteed for any possible public damage. With the immediate impact of evacuation, short and long term health dangers, emotional anxiety and property values impacted negatively, it is a major personal and financial issue and deserving appropriate compensation. People should not have to litigate for years to be compensated for a nuclear processing accident.

The Peterborough Fire Marshall qualified

the BWXT premises as high risk. Here is a legacy of disaster experience caused by human error.

I find that I was near the little known industrial Sunrise propane facility in a densely populated area in Toronto. Only when it blew up in the night did I realize it was there. It rattled our windows more than a kilometre away and damaged houses nearby. The whole city was shocked and very concerned about why it was there at all.

Therefore, liability insurance is needed because there are thousands living close to the site here and BWXT.

GE today has still not cleared up their toxic waste, as the councillor sadly remarked in 2016 when GE left and closed the gates, because it would cost \$1 billion. What if GE's toxic legacy cannot be separated from the nuclear contamination during decommissioning and the cost exceeds \$48 million?

The 10-year licence concerns us greatly. We are not being told what will be happening in the future. It is disconcerting for a location near eight schools and thousands of residents, not to mention the hospital.

In 2020 and for many reasons expressed by

intervenors, BWXT should move the pelleting process from a densely populated region with a reasonable buffer zone. Mitigation is not acceptable. We deserve total safety. Safety begets sanity. In this case moving this industry away will give that and eliminate emotional anxiety.

Zero tolerance on nuclear related contamination and possibility of accidents is what everyone in our city deserves.

BWXT's nuclear processing is in the wrong place. Moving the nuclear industry away from our city makes the most sense. Also, you want to avoid city-wide and regional damage to our valuable reputation as a tourist area in the Kawarthas.

The GE location used by BWXT is 100 years old. A 100-year old zoning law is perpetuating an increasingly toxic problem for this city. GE cannot dispose of the toxic legacy because it is very costly to clean up. They will just continue paying low taxes and lease the site to any toxic processing entity like BWXT, although they have a good record on that.

But this way they perpetuate the city's conundrum. In this unique case one toxic industry moving out should not mean another should move in and expand.

Let's go outside the box for a solution brought about by a paradigm shift.

There is an opportunity for our provincial government and our local government to clean up and rezone the site to residential and commercial. Just imagine, no more toxic industry in the heart of Peterborough city and Toronto. That is really worth pursuing.

We need GE to turn over the site or clean it up. And if they are unwilling, then it should be expropriated under Crown law and then Ontario can reclassify it as brown field land. And this should be our long-term plan.

The Ontario Ministry of the Environment needs to be involved as per the industrial legal guidelines on contamination of any industrial site classified as brown field, and this will allow the funding for clean-up.

Then the sale of the 21-acre prime real estate land can be used for residential-commercial and this will recover some of the funding invested for the clean-up. This will help reduce our housing crisis and create employment lands while also increasing tax revenues much needed for the maintenance of our city infrastructure.

We can begin this proposal by virtue of

people power in our democracy. I ask everyone who resonates with and supports this solution to call or write to Premier Hon. Doug Ford and our Peterborough MPP, Hon. Dave Smith, and any of our honourable city councillors, including our Mayor, and not forgetting our own town Planning Department.

Let us make Peterborough free of toxicity by taking back the old GE land and cleaning it up for good. Granting the 10-year licence will delay any chance of resolving this outdated zoning issue. We ask the CNSC to grant only a five-year licence, with no pelleting, to allow for this proposal to be reviewed by our governments.

BWXT should begin seeking a new location with an appropriate buffer zone, maybe between Lindsay and Peterborough, so as to keep their valuable employees. A new or retrofitted building for all the pelleting needed would be possible to implement in five years.

Pickering closes in four years and by their admission the pellet production will be cut by half. This is an appropriate time for planning on a change of location, for them to expand according to their business needs.

Meanwhile, if everything is so safe, then

the community should be made aware of the levels of contamination by a large LED digital display outside the BWXT building that is visible from the school and also posted online.

In conclusion, no federal taxes, our money, should be used for any industrial accident compensation with appropriate liability insurance or a public damage guarantee being mandatory.

Our safety is the reason your Commission exists. Endangering our lives physically, mentally and emotionally through perceived risk is against your federal mandate. We must be made your prime concern in this difficult issue.

The BWXT licence should be made separate due to Peterborough's specific concerns expressed at these hearings and should be granted for only five years with no pelleting allowed, because the industrial location hurts the community due to real and perceived risks.

This will also give governments time to review the situation for clean-up by expropriation and to reclassify it as brown field. As compassionate and environmentally conscious leaders and high standing individuals in society that I view you as Commissioners, we

ask you separately from your mandate, collectively or as individuals, for your humanitarian support for the people of Peterborough.

CARN, who has been our help, is in touch with CELA -- CARN is the Citizens Against Radioactive Neighbourhoods and CELA is the Canadian Environmental Law Association, and they are both online. So please send them your e-mail or letter of ethical support on humanitarian grounds.

Please propose to the provincial government that by taking back the contaminated 21-acre property owned by GE, we save our city from a legacy of contamination and help us make an historic leap forward.

With the provincial and local governments working together for a win-win, we achieve total safety and the highest good for the entire Peterborough community.

Thank you.

THE PRESIDENT: Thank you, Mr. Topan, for your presentation.

We will open up for questions, starting with Dr. Berube.

MEMBER BERUBE: Well, thank you for your presentation. You speak very well, you make good

arguments, and compelling, I mean, to say the least. So we've covered most of what you've spoken about today in the last five days so I have no further questions. Thank you.

Thank you for taking the time and energy to come and see us.

THE PRESIDENT: Dr. Lacroix.

MEMBER LACROIX: Thank you very much Mr. Topan for your intervention. I really appreciate it.

THE PRESIDENT: Dr. McKinnon.

MEMBER MCKINNON: Thank you for your comments.

I just have one question for a point of clarification for BWXT, and it's in connection with the question about what if the cleanup costs are more than have been allowed for?

So we've discussed the instruments for the decommissioning costs and the way that it was estimated, and that's all understood. But, could you just clarify whether if and by how much contingency you would have included in the estimate?

MR. MacQUARRIE: It's John MacQuarrie, for the record.

The contingency is twenty percent, and you

know, to be clear, we are accountable for the cleanup whatever it costs. The instrument is there in the event of our bankruptcy or something like that, but we'd clean it up, whatever it costs.

THE PRESIDENT: Dr. Demeter.

MEMBER DEMETER: Thank you for your presentation. I have no further questions.

THE PRESIDENT: Mr. Topan I know you said you've been following part of the hearing either on the webcast or here. There's a couple of specific issues that you raised around liability insurance and remediation of legacy waste. We did spend an extensive amount of time on that, so either when the transcripts are available or on the webcast you may want to follow through with that.

Again, many thanks for your submission.

Any final comments you'd like to make, please?

MR. TOPAN: Yes, President Velshi and Honoured Commissioners, there is a book titled *Into That Heaven of Freedom*, by Mohamed Keshavjee, an author to whom I am related, about the struggle of our ancestors during Apartheid in South Africa. I was deeply affected by reading the book. I was born in that country. It strongly

conveyed a situation of "us against them".

In Peterborough the CNSC staff CMD responses also evoked the same feeling in our community of "us against them" as alluded to by many intervenors.

I feel deeply for our community as it faces this toxic threat and pleads for safety and sanity in your decision. Please don't burden us and our children with this industry. The solution is to grant a final and separate licence of five years with no pelleting.

Please be compassionate in your ruling giving us life without dread of the future. Where there is a will there is a better way. Help us move this industry away.

Thank you.

THE PRESIDENT: Thank you very much.

MR. TOPAN: I did have one question, I will put to Dr. Demeter. You talked on Wednesday about a T-bone situation with a truck trailer. But in scenario, most accidents occur in the winter when it's very windy with visibility issues, extreme weather. Why was that scenario not included in the plan for recovery of the uranium part or on the ground? That was the question and I'm just wondering.

MEMBER DEMETER: I don't think I can answer that question. I can ask BWXT whether that scenario -- they did explain what their emergency response would be to spilled uranium, and perhaps they can speak to their response to spilled uranium in a transport accident?

MR. SNOPEK: Dave Snopek, for the record. That's right, BWXT is responsible for transporting uranium material. We do that in accordance with both *CNSC Regulations* and *Transportation of Dangerous Good Regulations* under Transport Canada.

Under that program we have an emergency response assistance plan which describes the actions that BWXT takes to respond to and assist with the response to that accident. In that plan there are a number of different scenarios that are considered. All weather conditions would be considered in that. The initiating event for a transport accident could be weather conditions, it could be other drivers, it could be mechanical failure. It doesn't go into the initiating event; it's more in terms of the response to the different types of accidents that result.

I'm speaking about whether there is containment of the material on the truck. Whether the

truck is upended. Whether there's the release of material into the environment. And it goes into the responses to those scenarios regardless of the initiating event for an accident.

MEMBER DEMETER: Thank you.

THE PRESIDENT: Thank you.

Our next presentation is by Ms Catherine Prinsen as outlined in CMD 20-H2.247 and 247A.

Ms Prinsen, the floor is yours.

CMD 20-H2.247/20-H2.247A

Oral presentation by Catherine Prinsen

MS PRINSEN: Okay. My name is Catherine Prinsen, and I do use she/her pronouns and I am comfortable with being referred to Ms Prinsen.

My gratitude. I'm very grateful for the Michi Saagiig people for holding the sacred responsibility of being the caretakers of this land. I appreciate their commitment to this. As mentioned by Chief Carr yesterday morning, the caretaking of the land is for all humans and future generations.

I also have a lot of gratitude to the

Commissioners, the staff, BWXT and the intervenors for their openness and their stamina. This is like a marathon. I'm not a public speaker. I hope to say something a little bit different than all the people that have spoken today. I wish that I was a funny person and I could make you smile a bit, like my friends Rachel and Graham, but my topic is a bit heavy.

My positionality. I identify as a settler descendant and I will speak from that perspective. And there are times where I might say "our" responsibility, and that is coming from a settler perspective.

Being a Canadian citizen the honour of the Crown is very important to me. If it is not upheld I do not feel okay about having a presence in this territory, or any other territory on Turtle Island.

Since I live in the Williams Treaty area I consider myself to be a treaty person and as a result I have responsibilities.

In addition to my personal written intervention I was involved in submitting a group letter with three other folks: James Wilkes, Beatrice Chan, and George Campana that thirty-three other people signed in less than 48 hours. I was a bit surprised that no

questions were raised last night about this group letter.

Okay, so now for my slides. I have two parts, one obviously is about indigenous consultation, engagement and consent. And then the other part is the license transfer.

So, Consultation, Engagement, Consent, Transparency, Nation to Nation, etcetera. I've got these questions: Who? When? Where? What? And, How?

My first question is actually Why? Which I didn't put on here. As to my initial remarks they spoke to this. It is the Crown's responsibility to uphold its honour.

We heard from three Michi Saagiig chiefs who were here yesterday that they are triggering the duty to consult.

Who? Who decides who gets consulted? Who is considered an "Indigenous group"? Are all seen of the Williams Treaty First Nation communities being consulted? Who has been consulted about the discharge limits within this territory? As noted yesterday, Alderville First Nations was not on the list of BWXT's communities of interest. I put "oops".

I appreciate the explanation yesterday, however, the City of Peterborough does lie in the traditional territory of Alderville. And I want to take note that in the interventions there was actually at least one intervention written by an Alderville member on behalf of three Alderville members that live within one kilometer of BWXT. So, there is interest. So, to take a correspondence from one person and let that entire community go is not responsible. And Chief Carr, I believe it was Chief Car and Chief Whetung mentioned that consultation is a community effort. It's not just that single person, or single representative.

Next is, When? Who decides when the duty to consult is triggered? And I heard earlier today that all this work is happening based on the CNSC staff, their work that they do, which I appreciate they do a ton of work, and ultimately it falls on you. But by this point where is the room for the consultation? If you were to choose to say that the trigger is -- the duty to consult is triggered? Where is that time? It needs to happen way before that. So there is a problem in that process.

And, I was very curious about the consultations and consent that took place in the 1950s and

1960s when this facility first began, when the facility -- or, the work was happening in Toronto.

What about in the '70s when the Pickering plant was built?

In the '80s? I bet you there wasn't consultation happening at that time; I don't know, but that's my guess.

Was there a duty to consult triggered in 2010 when the low enriched uranium request came about for this particular facility here in Peterborough?

Was the duty to consult triggered for the license transfer in 2016 which I will speak about later.

Wow, people really do get a dry mouth up here, it's amazing. I was witnessing that, thinking what's happening up here.

--- Laughter

MS PRINSEN: And I made you laugh, that's good.

Okay. Where do these consultation things happen? You know, these are Nation to Nation relationships and they require that respect. They really, in my perspective, should be taking place in indigenous spaces, taking place in public hearings. I have an issue with

that, myself.

I was curious about the emblem; I've never really looked at that emblem before. I did a little bit of research and that, you know, kind of represents the sovereignty of Canada, and I respect that as a citizen. I'm a Canadian citizen, I can respect that. I can respect the raised table and be here and speak to you. But when I saw the chiefs here yesterday, it didn't feel right. It didn't feel right. They have their emblems, but they were down here and it just, again, in here, that just didn't feel right -- Indian person, which was discussed yesterday.

I don't know if I need to go through all this but, you know, what were the consultations about that took place? I've heard lots of letters and you know there was some confusion about what was meant to be discussed.

I think something that's important is this regulatory document REGDOC 3.22 that I found very interesting, but when there's no duty to consult triggered, there's no responsibility of the proponent to act on that document; that's my understanding.

Now that the trigger to consult, in my opinion, has been triggered, I think BWXT really needs to engage in that particular document. So, I do have a

question, If that isn't a necessary requirement what is? What kind of engagement is actually required? Is there a license requirement for engagement, or is that just something that's -- you know, would be helpful to have?

I was happy to hear that BWXT made it to a Williams Treaty First Nation community in January of 2019, or 2020, sorry, this year. I was curious about whether there's an indigenous representation in the PAR group, or the community liaison committee? I think that would be a good suggestion.

I think land acknowledgements, even though they can be really bumpy and hard to do and take a long time to learn how to do, is a really important process that I would suggest BWXT take on. I know they did it once in one of their PAR committee meetings, but I didn't see it ever again.

Okay, how do -- oh, my gosh, there's only one minute longer.

Okay, I have these consultation protocols that you're more than welcome to look at. These are outlined by the communities themselves. I think it's really important that we engage in them.

Okay, let's keep going here. Consent.

You know, I know I hear that Canada is taking on the United Nations *Declaration of Rights of Indigenous People*; that's all about consent, you know, and my friends Rachel and Graham they talked about that.

One thing I want to speak about is this brand new company. I heard yesterday and I really did feel a lot like, you know, Natalie Cutler said, "We're new at this," But, I've also heard John MacQuarrie say, "We can be serving Canada for 175 years." You can't have it both ways. You can't have it both ways.

175 years is like -- that's about as long as you know Treaty 20 has been in existence, so it's not really new, not if you've been paying attention to your treaty partners.

I just wanted to mention that these indigenous communities are not the public. They're not intervenors. They're not hearing participants. They are treaty partners. They're sovereign nations, just like your emblem represents.

I'll switch over to the licence transfer because there's a little bit of a -- we've talked a lot about legacy issues. There's a legacy issue, I think, related to this land transfer thing. I really think that

that land transfer -- I'm sorry, land transfer -- that license transfer really should have been a public hearing and I really do think that duty to consult should have been triggered. I know it seems like it was just an administrative thing but given all the legacy issues of that property as well as the legacy issue of the Williams Treaty, since 2015 there have been discussions about the Williams Treaty Settlement that the Canadian government is aware of. That was all taking place during that transfer.

I've been sitting here watching BWXT and even though I'm like really opposed to what's happening, having a lot of compassion about like all that you're confronted with, and I think that transfer could have prevented that. I really do, because you would have -- we would have had an opportunity to share about the Williams Treaty Settlement and the communities here, and the legacy of that property, and you came in and that's kind of hit you now, after the fact. So, I do think that CNSC, that was a disservice to BWXT and the indigenous communities here.

One question I have about this transfer, I do know that it was an amalgamation and on that front who are the parent companies of BWXT Nuclear Energy Canada? Ge

Hitachi Canada merged with BWXT Nuclear Energy Canada, actually, and formed a new company. Does that not make Ge Hitachi a parent company? Do they actually not have some responsibilities in this? Are there not ties to that property through GE? That's a question that I have.

My time is up but I think -- I hope I really was able to communicate my concerns. I'm not a public speaker. This really -- I showed up because it's important to me, but it is an intimidating process, so I hope I made enough eye contact and --

--- Laughter

MS PRINSEN: -- and was able to communicate.

Oh, and also -- well, maybe I'll just save this for my final words, so.

Thank you.

THE PRESIDENT: Okay. Well, thank you, you did very well. Thank you.

We'll open the floor for questions.

Dr. Lacroix.

MEMBER LACROIX: Thank you very much, Madam Prinsen, for your intervention.

I read your submission carefully and among

the almost 250 submissions, I always try to find the originality and the complementarity. Thus far, we have discussed several subjects and several issues and the originality in your written submission, are your Part 3 and Part 4, in which you make very interesting and very touching recommendations. And my wish is that DWXT, as well as CNSC, will pay attention to these recommendations.

Thank you.

THE PRESIDENT: Dr. McKinnon.

Dr. Demeter.

MEMBER DEMETER: Thank you. Thank you for your presentation.

The one question that I have is to CNSC staff, with all the paperwork, who is the licence applicant for BWXT? And, is it a conglomerate? Is it BWXT Nuclear Energy? Whose name is on the bottom of that form?

MR. AMALRAJ: Julian Amalraj, for the record.

The licensee and operator is BWXT Nuclear Energy Canada, which is a separate entity.

MEMBER DEMETER: Okay, thank you.

THE PRESIDENT: Dr. Berube?

MEMBER BERUBE: Thank you for that.

There's a means of public disclosure. It's already on the website, but I don't know if you know that I'm actually indigenous Metis, myself. And, so the duty to consult is very, very important to me and I can tell you from my personal experience on the Commission now two years, it's extremely important to this organization as well.

Historically? Well, things weren't perfect, but big improvements have been made and I think we're moving in the right direction collectively.

I can tell you from a Commission standpoint how is duty to consult triggered? We have a legal team that advises us as to whether or not the duty to consult has actually been triggered on any particular file. You know, we have to -- we have to look at that very seriously because of the fact that there are repercussions by not addressing it properly.

What I'd like to do at this point though, is staff does their own independent evaluation of whether a duty to consult has to be triggered or not, and if they would please speak to that process by which you determine whether or not that is to happen?

MR. LEVINE: Adam Levine, for the record.
The duty to consult as a legal construct

in common law has come around as of 2004-05 with the *Haida* and *Taku* Supreme Court decisions and, since that time, the federal government has put in place certain policies, procedures and mechanisms to ensure that the federal agencies, Crown agencies are meeting its legal duty to consult.

There is an ever-evolving process of improving best practises, working with communities directly to ensure that it's a meaningful process, so at the CNSC what we do, we have a dedicated team, that's my team, the Indigenous Relations Team at the CNSC, and what we do, we work on every single major licence application at the CNSC, whether it's for renewal or a new facility. And we review that documentation to look at what is the applicant actually asking for; what are they going to do in terms of either if it's a renewal or an amendment to their licence. And what are the potential consequences in the real world to the biophysical environment, but also to the rights and interests of indigenous peoples that could be affected by that.

We have over a decade of experience or more doing that, and we've built excellent relationships with our indigenous partners around the nuclear facilities

we regulate, including the Mississauga Nations of the Williams Treaties that were here yesterday. We meet with them on a regular basis because there's not just BWXT, but a whole host of different facilities we regulate in their territories, and so when -- in terms of the duty to consult and that determination we need to look at caselaw, we need to look at best practises, we need to look at what is that actual trigger.

There's no magic line. It is an assessment. It is a professional judgment call. But we do an initial assessment to look at what are the indigenous and treaty rights within the vicinity of that facility or project; what are the interactions potentially with the environment and those exercise of rights as we understand them. That's just the Crown's side of things.

Then, like once we identify the right communities, we go out and we speak to them, we inform them and we initiate a process of dialogue, a two-way dialogue, to better understand what are their concerns, their priorities, and make sure they have the right information. And this is all done commensurate with the risk and commensurate with the type of process, the level of interest from groups, because we usually contact a wide

list of interested communities. We may only hear back from a few.

We always do follow-up to ensure that communities -- we know they are extremely busy, capacity is a big issue, so we want to make sure they do get the information. And then we start that dialogue about what a meaningful consultation process means for them and develop that and integrate that into our regulatory process to make sure it's meaningful, and address all concerns up until we get to the Commission Hearing process.

We demonstrate what we have done before the Commission through our CMDs and other documentation and then make sure the communities, if they would like to, come forward to the Commission to express their concerns to the agent of the Crown, the decision-maker, the Commission, and then have the Commission deliberate on that and make a final decision and, you know, place conditions or recommendations to address any concerns should they arise.

So it's a very thorough and tested process and we have been doing it with great success for a number of years now.

MEMBER BERUBE: Thank you for that.

I just want to add to that. Even if the

duty to consult, a formal duty to consult is not triggered, and sometimes it is not, then we are always about rich engagement and I think everybody here understands the need for engagement. So I would like to have BWXT quickly discuss where you are at in the engagement process, where are you in the learning curve, what do you think you need to do, what are you good at already?

MS CUTLER: Natalie Cutler, for the record.

I first want to say that this intervention was very helpful and I think this intervention makes us stronger. So I want to thank Ms Prinsen for raising her thoughts and her perspective.

BWXT is fairly green to this process, as I have mentioned. We started by joining the CCAB. The Canadian Council for Aboriginal Business has a program to help businesses like ours that are new to this. As we became a company that had a licensed business in 2016 with this acquisition, we wanted to do this well, and you are right, we should have been doing it a lot longer than we have been. However, we really rely on feedback from the communities that are interested in talking to us and we reach out to all of them within the communities where we

have operations and it starts with meaningful dialogue and understanding of their needs and concerns and as well we like to inform them about our business.

The PAR program, the Progressive Aboriginal Relations Program, which is kind of guiding us right now through our learning, has more PAR drivers -- is what they are called.

One is leadership actions and that is having, for example, our leaders really reinforce at our company the importance of strong community relationships.

Another is business development, so how can we work together to be their partner or procure materials from indigenous businesses.

Another is obviously community relationships, which is, you know, forming a long-term relationship with our communities, to understand one another, grow from one another.

And the last is employment.

So we have all of those four drivers that really help create a foundation from which to grow each of those kind of tracks to become more -- to have more meaningful dialogue with our communities on those four tracks.

And really, I would say we are in the process. We are in our third year and we are -- I think we are doing well, but we have a lot to do, so we are really going to be looking for that feedback.

And I would like to invite Ms Prinsen, if she is interested, to think about joining our Community Liaison Committee, or if you would have someone you would like to suggest, we would be very open to that. Thank you.

MEMBER BERUBE: And just so you know, I mean CNSC also has an active engagement program. So if the formal duty to consult does not engage, it doesn't mean they don't do anything. So could you just highlight what your normal engagement activities look like so that we have some scope?

MR. LEVINE: Adam Levine, for the record.

Yes, exactly. So if the formal duty from our perspective isn't triggered because of potential impacts on indigenous or treaty rights, it doesn't mean we don't communicate regularly with interested indigenous communities. So we have a very robust and ongoing communication and engagement process with communities.

So for the Williams Treaties First Nations, as I said yesterday I believe, we meet right now

on a quarterly basis to make sure that there is this regular dialogue that is ongoing and we give a number of options to communities to explain how they can get involved on a regular basis outside of this formalized process.

So there is our annual Regulatory Oversight Reports. We offer participant funding for communities to hire experts to review those reports, see how compliance and our verification activities are going and performance at the different sites. We have our Independent Environmental Monitoring Program, as you have heard lots about, and want to incorporate indigenous knowledge more and involvement in that. It's regular meetings to make sure that we are giving updates on all the different facilities in their territories and we do that with the Williams Treaties on a regular basis.

And we also offer the opportunity to formalize that engagement relationship, should communities wish, through terms of reference or workplan, et cetera, to make sure that we are partnering together where we can and starting to build capacity in the communities as well. Because it is not enough just to talk once every five years or at the time of a licensing decision, but throughout the lifecycle of the facility, because we are a lifecycle

regulator and those communities are going to be there forever and so we are we for many aspects.

So that ongoing relationship is extremely important to us.

MEMBER BERUBE: That's a long-winded answer, but I hope that helps you --
 --- Laughter / Rires

MEMBER BERUBE: -- get some perspective. Actually we take it very seriously and so your concerns are heard and we share them. I mean nobody here is perfect, we are all learning and that's where we are going with it. As long as we engage and we learn, we should be fine. Okay.

THE PRESIDENT: Well, thank you very much. So we will turn to you, Ms Prinsen, for your last few words, please.

MS PRINSEN: I think what I would like to do is my conclusions.

I really do support the request of the Chiefs yesterday to defer in the honour of the Crown and in respect of your treaty partners.

I was just sitting here thinking about, you know, BWXT and that learning curve that I'm on and I'm committed to and I make mistakes all the time. Sometimes

it requires a lot of courage to put yourself out there, given the impacts of colonization really.

And just as a suggestion, it just crossed my mind that, yes, the Commission can defer, but you can, too. Like there is a way that you could maybe, I think, change your application to make space for that deeper consultation and it not just fall on the Commissioners. Because the more people who make space for that and are brave enough and open their hearts and trust in our ability to have good relationships, I just think it's worth taking those risks and trusting. And I don't know, I have and I get back more than I risk.

I do want to acknowledge that, you know, consultation and engagement hasn't taken place, so I do need to stand firm on, you know, not allowing the licence to go through as is with the pelleting. I want to support the indigenous people of this place --

THE PRESIDENT: Okay.

MS PRINSEN: -- in their request. Thank you.

THE PRESIDENT: Thank you. Thank you for your intervention.

Our next presentation -- and I believe

it's our last presentation -- is by Mr. Cameron Douglas, as outlined in CMD 20-H2.249.

Mr. Douglas, over to you.

CMD 20-H2.249

Oral presentation by Cameron Douglas

MR. DOUGLAS: Thank you very much, Commissioners, for the chance to be here. I'm pretty sure that everybody in the room is really looking forward to my presentation --

--- Laughter / Rires

MR. DOUGLAS: -- and of course that has nothing to do with what they are expecting me to say, but knowing that by the end of it we all get up and leave. I know some of you have come in from out of town and it has been a long week. You have honoured our community with your interest.

I will say that I haven't had a chance to get down to hear others speak. I am a schoolteacher, it is hard to get out of the classroom. But a few did share with me actually some thoughts. They said they honoured your attention, they said you are very active listeners and that

you seemed genuinely sincere to listening to what we have to say. So that encourages me and I thank you for that.

I would also like to honour those who have spoken to before me, whether that's in objection to the application or those who feel safer about this and I thank them for their contributions.

I have to say I'm feeling a little bit heavy in my seat here thinking like I have the weight of the final words of this Commission and I sort of note to myself I'm going to get my name in earlier in the process so the load isn't on my shoulders.

By way of introduction, I live in the city, I have lived here for 20 years. My house is about 300 metres from the BWXT plant. I have a wife and two children. But I don't come here to speak of my own individual concerns, I'm thinking at I think what is a community level. But I also want to introduce myself as a schoolteacher. That is my career and I have spent the last 15 years of my working life working with young people to help better understand their place in our planet and how they can actively engage in decision-making.

My university training, I have an undergrad degree in Systems Design Engineering, I

specialized in environmental modelling. My graduate degree, my Master's is in Environmental Planning. And most of what I do now in the school is within education.

So speaking of my teaching role, I want to share this afternoon I was just up the street at Market Hall. I took 75 of my students to see a dramatic presentation put on -- it's called "Chemical Valley", and in this presentation they cut to the heart of the challenge in Sarnia that is faced at the intersection of what we all understand to be a rather large corporate presence in the petrochemical industry sitting right next or in fact around an indigenous community. And I don't think it's any surprise or coincidence that we have those juxtaposed in the setting of environmental racism. And as I was sort of reflecting on that, I got to where I want to start my presentation and it's here.

One of the things I have come to appreciate in my work in trying to understand an indigenous world view is a much more holistic approach to thinking about health. And I know health is front and centre in all of our deliberations here today.

In my limited understanding as a settler, I appreciate that health is framed in the context of the

heart and the spirit and the body and the mind, and my concern here, to be quite honest, is so much of our focus has been on just the body. And I think we can all acknowledge that we have finally in our world come to appreciate the importance of mental health.

As a schoolteacher working with young people, helping them understand the state of their planet, I and many others have been acutely aware of an emerging condition called eco-anxiety and anybody paying attention to the planet I think it would be hard not to have eco-anxiety. It's not just sort of a term we banter around, this is sort of within the medical practicing now.

And that gets me to thinking about the conversations that are happening here. I know there are some amongst us today who feel quite confident that our physical health will be fine if this application proceeds. I don't actually agree with that, but I acknowledge that that thought is here.

But I worry that we are not thinking about mental health. And I know from talking to other people behind me here and having been at other meetings and chatting with people on the streets that there is a

significant amount of eco-anxiety around this application. It's undeniable. Whether one decides that it's valid or not I think is rather immaterial, it's real and it's health and we need to think about that.

And I know as I talk to people I can see it viscerally and I haven't been here, but I would be surprised if you haven't had some rather emotional presentations as people are sort of reflecting this state of mind.

I want to just talk for a moment about siting. Of course GE was around for so many years and some of those issues of pollution cropped up on us. We had a job-hungry city as GE wound things down. BWXT got established in that context and now we have, you know, an application for the pelleting.

And, with all due respect, the idea of expanding nuclear operations across from the school is nothing short of outrageous, in my view. I'm not going to dwell on it, I know you have heard this before, but it's outrageous because we have a situation where virtually all the benefits of this operation would fall to a corporate entity.

I certainly reflect that there are

benefits to some individuals in our community who work there, but all of the risk is borne by the community. All of the risk is borne by this community and the benefits go to a corporation that of course extends well beyond Peterborough.

And there is risk. And I want to just touch for a moment on the reality that -- and I have seen -- I have read other depositions and I appreciate that your science panel has responded in a timely way to that, but my concern is that it's coming across like there is one version of the science and I am going to push back on that.

I have read the depositions, but I'm not talking about alternate facts in sort of Donald Trump style here, we are talking about peer-reviewed science. The peer-reviewed science is not unequivocal, as some of the responses that I read last week in the science committee's response to our concerns. It is not unequivocal and it makes me very concerned that it appears like these are being swept away and the final word rests with the Commission, somehow that they are the sole proprietors of valid peer-reviewed science.

Let's talk about safe fail versus failsafe operations.

We often talk about making sure that things are failsafe so that we put in every possible back-up system and every filter and think about every eventuality that might happen so we avoid the worst. I am going to reframe it here, I think we need to be talking about safe fail.

We do recognize that things happen beyond our control. We should instead be thinking about an approach here that should something fail it's going to be safe for all of us.

Could something fail? Well, we have been reassured for so many years that everything is under control down the street, but I know it has been brought to your attention, perhaps many times, that we have the emerging issue of beryllium across the street and I don't know where that's going. I'm deeply concerned.

The trend is unmistakable from the limited data we have. There could be a huge smoking gun that will unfold as those tests get deeper in the summer. And I don't think anybody can look me in the eye and say that they are positive that that is not going to emerge as a real problem.

So here we are relying on a failsafe

system where in fact we are seeing that it is not quite perhaps as safe as we need to, and these are huge stakes at play here.

I want to just sort of close things out here by thinking about in my line of work we honour Greta Thunberg. I work with 15- and 16- and 17-year-olds and Greta is reminding us that when we make decisions -- or when adults are making decisions they need to think about beyond tomorrow and think about of course the generations that are to follow.

I don't know if Greta would allow me to do this, but I will borrow from her perhaps some of her anger and her indignity and, with all due respect, I will say this:

How dare you consider expanding a nuclear operation across from a school?

How dare you accept that BWXT and the CNSC science panel are the sole proprietors of valid science?

And how dare you put corporate profits ahead of community safety?

We have a well-established democracy in this country and you are here and they are here and all of the folks at the back are here to make sure that our

decisions reflect the broader public interest and right now I urge you to do that. Thank you.

--- Applause / Applaudissements

THE PRESIDENT: Thank you, Mr. Douglas.
Dr. McKinnon...?

MEMBER MCKINNON: I don't have any specific questions, but thank you very much for your comments. They have been very stimulating and thoughtful and I think this whole week has been very important for us to hear all the comments from you, the other intervenors and see the presence of the community. It has been a very important balance to only hearing the science side. Thank you.

THE PRESIDENT: Dr. Demeter...?

MEMBER DEMETER: Thank you very much for your presentation.

Through especially the days that we have been in Peterborough we have had a lot of discussion on the beryllium and soil issue at the Prince of Wales School. We have noted the data that was presented and had questions. We have had a number of intervenors, one of which did a fairly sophisticated analysis.

So we are aware and we are very supportive

of an accelerated, expanded, comprehensive soil sampling to find out where the numbers are going and if it is in fact a trend, irrespective if it's below any guidelines, to identify the source. So that is where my head is sitting right now.

THE PRESIDENT: Dr. Berube...?

MEMBER BERUBE: Well, thank you for your presentation. Having a 17-year-old at home and having very similar conversations that you have alluded to on a regular basis, I can tell you that I completely sympathize with your perspective and the needs of the future. That's one of the most important things on my mind.

We have already talked extensively about most of the things that you have brought up, so I have no questions.

THE PRESIDENT: Dr. Lacroix...?

So, Mr. Douglas, any final words from you?

MR. DOUGLAS: Just briefly.

And I appreciate you mentioned your daughter. I would urge or hope that when you are sitting down to sketch out your response to what you have heard that you might sort of place yourself mentally on my front porch 300 metres away from BWXT and that you might also

think about your own children attending Prince of Wales School. Thank you.

THE PRESIDENT: Thank you. Okay.

Well, this concludes the oral submissions.

We will now move to the final round of questions and we will start with you, Dr. Demeter.

MEMBER DEMETER: Thank you.

If you could pull up from the staff slide deck, the presentation slide deck 1A, slide number 22. This is really nitpicky. It shows you I don't have a lot of questions.

So when I was reviewing the CMDs, I reviewed the written first and then the presentation slide deck comes quite a bit later -- well, not quite a bit, it comes later -- and then I review it and then by that time the memory of some of the original details is a little bit foggy.

So if I look at this slide on its own and I look at the -- and I remember what was said verbally when you presented it. So when I look at this slide alone and I look at the radiation dose to the public in Peterborough, it doesn't tell me what you said verbally or what was in the text. The Peterborough dose not measurable, as I

understand it, it was zero. Is that correct? If I read the -- it says gamma radiation effective dose for BWXT Peterborough measured using, dah-dah-dah-dah, the highest estimate effective dose for the licence was 0 mSv. That is from your written.

So my understanding is that you put less than .001 as a surrogate for zero, but if you saw this slide on its own and you looked at the values above, which are less than .001, it might not give that impression. So it might be worth having an asterisk in there to say less than .001 means that it was not measurable. Because if I saw this on its own, I just got a bit confused, okay, because of all the information and trying to keep it together.

MS TADROS: Haidy Tadros, for the record.

Noted. Actually, in our speakers' notes we say Peterborough facility boundary have been below detectable limits.

MEMBER DEMETER: Yes. I remember that when you said it.

MS TADROS: Yes.

MEMBER DEMETER: But if someone just looked at the slide, that wouldn't be necessarily apparent.

It's very nitpicky, I know, but it's...

MS TADROS: Noted. Thank you.

MEMBER DEMETER: Thank you.

THE PRESIDENT: And before we move to the other Commission members, Marc, maybe you can walk us through the undertakings and what the status of those are, please.

--- Pause

THE PRESIDENT: Why don't we move to Dr. Berube.

MEMBER BERUBE: Thank you.

First of all, I want to thank everybody for their participation in this session. It has been long, it has been arduous, we are all tired. I appreciate your indulgence and your efforts to try and clarify situations.

From a technical standpoint, I don't really have any questions at this point. I am satisfied with what I have heard and I can move to deliberations based on what I know.

The one thing that is outstanding here of course is leadership, and being a man with a strong leadership background and knowing full well that the leadership in any organization sets the culture and the

tempo for the organization, what I really need to hear from the President in particular is that you intend to be a steward of the environment and a steward of your organization and that you intend to take care of the safety and security of all that.

MR. MacQUARRIE: It's John MacQuarrie, for the record.

Thank you for the opportunity to comment on that.

I care as much about the people that I work with and the public and the environment as much as anybody that we have heard from today, in my view. I mean, you know, I operate with the belief that nothing that I am responsible for is causing any great harm to people that I work with, to the public or the environment.

And it is important to me and it is I think embedded in everything I do, you know. And it is something I have passed on to my kids and I think that, you know, they are young adults now, but I think they have that in the way they operate and I like to think it is partly because of an impression that I have given to them.

I think that, you know, if you take nothing else away, I hope you understand that when you look

at how we operate as a company and look at our leadership team, that is something that I think everybody that I work with cares about and it is part of our dialogues.

We start every meeting with a safety discussion about are we safe. There is an element of that about are the people around us in the community safe. We certainly focus on, you know, are we not doing anything to harm the environment. We have all kinds of programs to make sure that we are minimizing our impact to the environment.

So I hope that in everything that I have said and done here and that I do in my daily life that that is apparent to everybody around me. And I do understand the impact that leadership has and that the organization will behave to some extent the way I do and I do my best at that.

THE PRESIDENT: Dr. Lacroix...?

MEMBER LACROIX: Well, thank you for this gruelling week. I had a long list of questions and all these questions have been answered, so I thank you both, BWXT as well as staff, for answering all these questions.

I remain with one question, one technical question, and this question is addressed to CNSC.

You talk about exposure-based release limits. Now, a few months ago you provided us with a briefing note on how you calculate or how you come up with derived release limits. When I looked at this exposure-based release limits I was a bit baffled and I would like to know how is it defined for chemical substances, not radioactive substances but for chemical substances.

MS SAUVÉ: Kiza Sauvé, for the record.

So I will give you an example. In uranium we would look at chemical toxicity. So we would look at Health Canada's maximum acceptable concentration for drinking water and then we would also look at protection of aquatic life, and in that case it turns out that the endpoint value we would be looking at for protection of aquatic life is more restrictive than Health Canada's maximum drinking water, so we would use that value to then back-calculate what could be released from the facility in order to meet that endpoint parameter.

MEMBER LACROIX: Thank you.

THE PRESIDENT: Dr. McKinnon...?

MEMBER MCKINNON: I have no further questions, but I would like to thank the members of the

BWXT group for answering the questions very clearly and CNSC staff for very educational responses and all of the intervenors for very thought-provoking presentations and comments. Thank you.

THE PRESIDENT: And before I get to my few questions, Marc, maybe you can give us a status on the undertakings, please.

MR. LEBLANC: Yes, thank you.

So we had a number of undertakings, both in Toronto and in Peterborough, and for the record, I would like to state what is the status of each of those undertakings.

So the first -- I'm going to start with undertakings that have been closed.

So the first one was arising from the intervention from Ms Janet McNeill. It had to deal with the additional information on the 1959 agreement between the World Health Organization and the IAEA. A memo was to be provided by CNSC staff. That memo was provided and provided the information the members were seeking. We intend to make those memos accessible to members of the public who would be interested online as appropriate.

The second undertaking, we don't remember

where it came from, but it was for staff to provide information on all of the steps that would be taken for beryllium monitoring from environmental monitoring by a licensee to the IEMP and beyond, and I think since the undertaking was made there were a number of discussions where Mr. Rinker and others have provided verbal updates to the satisfaction of the Commission.

The third undertaking that has been closed was arising from the intervention from Dana Jordan, where staff undertook to provide information on the issue raised in respect of alleged violation of section 7 of the *Canadian Charter of Rights and Freedoms* and a memo was provided to the Commission on March 6th, 2020.

The next one is an undertaking arising from the intervention from Adrian Currie, where staff undertook to provide information on whether there were similar facilities to BWXT in residential areas in Canada and in other countries. Staff had proposed to provide a memo, which they have done today. So this has also been received.

The next undertaking arises from the intervention from Ms Jennifer Logan. It was about the liability of a licensee after a licence has expired, that

is, if contamination is found offsite here after BWXT is gone, who would CNSC go to in order to fix it, if I can paraphrase it, and staff and NRCan provided an answer and a memo was submitted today as well by CNSC.

The next one was following the presentation from Anna Tilman, where the staff undertook to provide the Commission with detailed information about types of inspections that were carried out at both BWXT facilities, what the results were, in other words, whether they were Type 1 and Type 2 inspections and what they were all about, and that item has been closed, with staff submitting a detailed memo to the Commission today.

The next one arises from the intervention from the Ontario Clean Air Alliance, where staff undertook to provide the Commission with information on the explosion or fire that occurred in 1999 at the General Electric Hitachi facility in Toronto, and staff has provided a memo today to the Commission on this topic.

There are undertakings that are still open and that will be provided to the Commission in the short- or mid-term basis, within this week or next week, or perhaps verbally today. That's why I'm raising it now, so that they can be completed as part of the rounds of

questions.

This one was to ensure that there were no pinholes in the fuel pellets or what measures does BWXT have in that context. We understand that BWXT should be in a position to provide this information probably today or in the short term, so you may want to park this one for a bit later.

The next one is one that is arising from an intervention from Adam Prinsen and a number of other intervenors, and that was an undertaking by staff to provide information regarding a picture of a lung being exposed to alpha particles that was presented during the presentation from Adam Prinsen and others. We understand that this item remains open and that if the Commission so decides we have staff in Ottawa that is available to answer this question.

The next one is arising from the intervention from Jane Scott, where staff undertook to provide information on the synergistic health effects between radiological and other types of contaminants and on the effects of the combination of the two -- the effects on individual factors. And again, we have someone in Ottawa that is in a position to answer this question if the

Commission so requests.

The next one arises from the intervention from Indie Bennett, where there was a siting question about whether a new facility such as BWXT with pelleting would be required to undergo an impact assessment under the new environmental legislation. We have staff in Ottawa that is available to answer that question if the Commission decides to proceed further on this one.

And I just have one more I think and that arises from the intervention from Chris Muir in Toronto I believe, where BWXT undertook to provide information regarding the effects of a catastrophic event at its Toronto facility, specifically in terms of a distance outside, various distances or at least a particular distance outside of the periphery of the facility. We understand that the Commission would receive a response from BWXT within the next two weeks is my understanding.

And that concludes the undertakings.

Madame la Présidente, I am available should you ever need me to go through them for those that are still open.

THE PRESIDENT: Okay. Thank you.

I have a few quick questions.

The first one is BWXT. Your licence, your current licence doesn't expire until the end of this year. We never asked why you submitted an application so early. What was driving that?

MR. MacQUARRIE: It's John MacQuarrie, for the record.

Our desire was to make sure that we were completing the process well ahead of the end of the licence period and we are never sure exactly how long that takes, so we felt we should start early.

THE PRESIDENT: Okay. So if we took until the end of year to make a decision, you are okay with that?

MR. MacQUARRIE: Yes.

THE PRESIDENT: In your presentation, your supplementary presentation -- and we don't have to put the slide up -- you talk about your lost-time injuries and given how rare those are with your good performance, what we have seen that many other licensees is their medical attention as well and then they report on their all-injury rate. It's fine if you don't have the numbers offhand, but what does that picture look like so that we get a handle on how your performance compares to others in the industry?

MR. MacQUARRIE: It' John MacQuarrie, for

the record.

So I don't have the data handy with me, but we measure all of that down to the first day and sort of what we call near-hit level. So we have all of that and we can share that.

In terms of medically treated events at these two facilities over the licence period, it's a very low number. I don't think we have the number, though, off the top of our head.

--- Off-record discussion / Discussion officieuse

MR. MacQUARRIE: So zero last year for medically treated events, but we can share all the data if needed.

THE PRESIDENT: Thank you.

And my last question. This is as we deliberate on one licence versus two licences. You had mentioned when we had asked you was -- it takes a lot of effort to prepare for licensing. Give us a sense of what is the level of effort and how much more would it be if there were two applications you had to come in front of the Commission for?

MR. MacQUARRIE: It's John MacQuarrie.

So we started preparing all of the

information that we needed to submit about two -- yes, roughly two years ago, so it was before we submitted those. Probably we were working on it for I'm going to say six months, something like that. So we have a team, some of the people that you see here, plus others, as well as consultants that we engage. And that is not continuous necessarily, but it's a significant part of some people's time. For example, Mr. Snopek has been heavily engaged in this throughout the whole period of that time.

So in terms of total hours or person-hours, I don't know that we have an actual estimate, but, you know, it has been a considerable amount of time for a team of probably at least a half dozen people through that period of time.

THE PRESIDENT: But would it be significantly more if there were two applications versus one?

MR. MacQUARRIE: Oh!

THE PRESIDENT: I mean, this was two hearings and not just one really.

MR. MacQUARRIE: So we haven't assessed that exactly, so I will give you my rough estimate of what we think that might look like.

So we think, after discussing it when the topic came up, because we had not thought about it before this hearing, but we do think it would be a fair bit more time because we essentially have to treat them as separate. It may be separated in time, I'm not sure, and so, you know, you have to duplicate all of those efforts to some extent. I mean we do have to prepare them when they are combined of course for both facilities, but now there has to be two of each thing, right. So we are not sure exactly what that sort of multiplier would be on those hours that we just said, but I could see it being in the order of 20 percent or something like that more effort for us.

THE PRESIDENT: Well, thank you. Thank you for that.

And before I turn to you for any concluding remarks, I want to echo what my fellow Commission Members have said. I have been on the Commission for over eight years and I can say with all sincerity I have never seen a group of intervenors that have come so well prepared, that have submitted such excellent interventions and who have grabbed us fully from the moment we walked in here with your stories, with your very emotional and passionate submissions. And, as you

have heard from each one of us, you have grabbed our attention and we have heard you.

--- Applause / Applaudissements

THE PRESIDENT: I agree.

I also want to thank CARN for mobilizing all of you, making you aware of the nuclear facility in your neighbourhood, for helping you prepare your submissions, because I think they have done a tremendous amount of service and so they deserve thanks as well.

--- Applause / Applaudissements

THE PRESIDENT: And a thank you to staff for your patience, for answering the questions so well, professionally and candidly. Thank you for that.

And a special thank you to BWXT. I have, over the five days, seen not only how openly you have answered but you have listened and you have responded and you have reacted almost immediately, which I think I find very gratifying and I hope the intervenors do, too, that they are making a difference, they are making an impact and you are listening and you want to do a good job and you are showing that, and for that I sincerely thank you.

And to all the support folks. And I know for those of us who are from Quebec, this has been reading

week, so they have been away from their families and so for that tremendous sacrifice as well, it is greatly appreciated.

These hearings are a big, big part of what the Commission does in wanting to make sure that we listen to the community and give the community an opportunity to come and speak about their concerns, their suggestions, and this is what makes our process so good and our democracy work. So again, thank you all for your participation in this.

With that, I will turn to you, Mr. MacQuarrie, for any final words you may have.

MR. MacQUARRIE: Thank you for the opportunity to make some final comments.

So first, we want to thank the intervenors for taking the time to prepare and participate in the licensing process. We, like you, have found all intervenors to be engaging and thoughtful, impressive and well researched. A lot of good ideas and suggestions that we have taken note of.

And particularly important, I think to all of us, but to me personally, is they have been respectful. To some extent there is disagreement about our operations

and the benefits that we provide, how we view it, and some of the intervenors don't view it the same way, but in all of this hearing, but not just in the hearing but in all the events that we have had in the community, information nights and things like that, we have always been treated respectfully and I think that is important and I hope that we have been viewed to be treating everyone respectfully in return. So I thank them all for that and that actually gives me hope that as we work continuously improving our community relations that we will find common ground and have some good dialogue.

I want to particularly thank the Curve Lake First Nation, the Hiawatha First Nation And the Mississauga First Nation for participating in the hearing yesterday and expressing their concerns about meaningful and ongoing engagement. We have been making efforts to build our engagement with indigenous communities and peoples, as Ms Cutler described a little while ago, but obviously, we have a lot more work to do and we can do better and we are committed to doing that.

During the hearing we have heard a lot of concerns about releases from our facility and, you know, as we presented, our emissions are well below the regulatory

release limits and we work continuously to make them as low as achievable and we strongly believe that we do not have any negative measurable impact on the public or the environment for both locations.

However, it is clear that many residents are sincerely concerned about releases from our operations and risks related to potential accidents. And so, you know, specifically here in Peterborough we have obviously noted the significant concerns expressed about the observed beryllium concentrations in the soil, particularly at the Prince of Wales School, and although we do not believe the apparent increase is caused by our facility, we completely agree with the residents that further action is needed to understand these observations.

And so, as I mentioned in Toronto and here, we are committed to implementing a soil sampling program here in Peterborough as soon as practical and committed to getting all the input on that that we need to from the community and expertise.

And we are open to suggestions from the community about potential other aspects of our environmental monitoring program that we will undertake to be as -- that may be helpful in addressing community

concerns. Because we certainly want to do that.

With regard to our public information program and community outreach, we have heard a lot of feedback about that, which we appreciate. You know, we are proud of what we do, very proud of what we do and our contribution to climate change and our good safety record, our good environmental record, but listening to the intervenors and others going through our community outreach, we understand that some people are not getting enough information, they don't feel we are transparent, there is a lack of trust. And so, you know, while I believe our team has made some pretty significant good strides in trying to improve the information we are sharing and our transparency, there is obviously a lot more work to do.

We understand that and, you know, during the hearing in Toronto I outlined a preliminary plan that we are going to undertake and I just wanted to summarize very briefly a few key points of that again.

That we are going to revisit the makeup of our Community Liaison Committees in Toronto and the one that we are establishing here in Peterborough to make sure that we have the right makeup of those committees and that

the agendas are right and that we are hitting the topics that we need to in those discussions, based on input from the members there and what we have heard.

We are going to establish a dedicated community relations specialist in Toronto, we already have that position here, and those will be local people that will be able to increase the way that we are interacting with the community.

Definitely, we have been increasing transparency. We are trying to disclose as much as we can, based on the requests we are getting and we are getting a lot more requests. We are working diligently to put more of that information out there so that people can have raw data, all the data, and assess how we are operating themselves and look at our documents, and so we are committed to that and we are working hard on that.

And we will -- you know, to get other feedback, we will resurvey our communities again as soon as it makes sense, but I imagine it will be fairly soon, to try to see if what we are doing is having a proper impact and that we are achieving the goals of that information program.

So just to wrap up here, you know, I would

like to highlight that this process, this licensing process has given me and our team an excellent opportunity to hear concerns from our communities in Toronto and Peterborough and it has provided us with a lot of insight, which has been very valuable, about how we can work with our communities to establish better relations, more trust, less anxiety about what we do. So, you know, we are going to work diligently to figure out how to make sure that we improve the relations that we have in our communities.

So finally, I just wanted to thank the people at BWXT that have worked hard to prepare for this licensing process. A number of them are with me here today, but there are a number of others that are not here that supported it in the background. I am very proud to have these individuals as colleagues. They are very bright and talented, caring, thoughtful people and I think they do a great job and so I just want to thank them for that.

And last, I would like to thank the employees of BWXT who work in these facilities in Toronto and Peterborough. I think they do an excellent job and, you know, when I look at all of the functions that I am responsible for in different segments of the business, the fuel manufacturing part of the business is the part that I

think runs the best. It is a very predictable, stable, well-run, well-operated, safe operation from my perspective and that wouldn't happen without the work of these individuals that are in the business.

And certainly our safety record, which is I think remarkable, and the feedback we get from our customer about the fuel that we provide, which is also remarkable -- we get scorecards and we get a lot of scorecards, but I have never seen a scorecard so good as what we get from our customer who we make fuel for and get a lot of kind of effusive positive comments and it's great to have a part of our operation that runs so well. And that wouldn't happen without the people doing the good job that they are doing. They are highly dedicated, they are great to work with and so I just want to thank them for what they do.

And I will close with that. Thank you all for the opportunity to entertain our licence application.

THE PRESIDENT: Thank you very much.

Marc, any closing remarks from you?

MR. LEBLANC: Yes. You have already thanked everyone that needed to be thanked and I just wanted to make sure that the interpreters and the technical

staff, the transcript staff, the Secretariat staff, all the support all felt included in those comments, because they were behind the scenes but they have done an amazing job for the last five days. And I think we have some who it was their first experience with a Commission proceeding and supporting us, so thank you for that.

THE PRESIDENT: Thank you all.

And that concludes the hearing.

--- Whereupon the hearing concluded at 5:28 p.m. /

L'audience est terminée à 17 h 28