Canadian Nuclear Safety Commission

Commission canadienne de sûreté nucléaire

Public hearing

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Le 23 janvier 2018

Best Western Pembroke Inn & Conference Centre 1 International Drive Pembroke, Ontario

Best Western Pembroke Inn & Conference Centre 1, promenade International Pembroke (Ontario)

Commission Members present

Dr. Michael Binder
Dr. Sandy McEwan
Dr. Soliman A. Soliman
Dr. Sandor Demeter
Mr. Rob Seeley

Commissaires présents

M. Michael Binder
D\textsuperscript{r} Sandy McEwan
M. Soliman A. Soliman
D\textsuperscript{r} Sandor Demeter
M. Rob Seeley

Secretary:

Secrétaire:

Mr. Marc Leblanc

M. Marc Leblanc

General Counsel:

Avocate générale :

Ms Lisa Thiele

M\textsuperscript{o} Lisa Thiele
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Opening Remarks

M. LEBLANC : Bonjour, Mesdames et Messieurs. Welcome to this hearing of the Canadian Nuclear Safety Commission.

The CNSC is about to start the public hearing on the application by the Canadian Nuclear Laboratories for the renewal of the nuclear research and test establishment operating licence for the Chalk River Laboratories.

During today's business we have simultaneous interpretation.

Des appareils d’interprétation sont disponibles à la réception. La version française est au poste 2 and the English version is on channel 1.

We would ask that you please keep the pace of your speech relatively slow so that the interpreters have a chance to keep up.

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

Official transcripts are also available on our website within a week after the close of the hearing.

To make the 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.

Monsieur Binder, président et premier dirigeant de la CCSN, va présider l’audience publique d’aujourd’hui.

Mr. President.

**THE PRESIDENT:** Merci, Marc.

Good afternoon and welcome to the public hearing of the Canadian Nuclear Safety Commission.

Mon nom est Michael Binder. Je suis le président de la Commission canadienne de sûreté nucléaire.

I would like to begin by recognizing that we are holding this Commission meeting in the Algonquin traditional territory.

Je souhaite la bienvenue aux gens ici
présents, and welcome to those joining us via the webcast.

First of all, let me start by saying that we are really happy to be here outside of Ottawa, even though it was challenging getting here today, but we made it and we're really happy to see that we can actually have this particular hearing.

I would like also to thank the hotel people for supporting us and for this facility that they have organized for us.

So let me start by introducing the Commissioners that are here with us. On my right is Dr. Soliman A. Soliman; on my left are Dr. Sandy McEwan, Dr. Sandor Demeter and Mr. Rob Seeley.

We have heard from our Secretary Marc Leblanc. We also have Ms Lisa Thiele, Senior General Counsel to the Commission, with us here today.

CMD 18-H1.A

Adoption of Agenda

THE PRESIDENT: I would like to now call for the adoption of the Agenda by the Commission Members, as outlined in CMD 18-H1.A.

Do we have concurrence?
So for the record the Agenda is adopted.

**MR. LEBLANC:** I will now go through some introductory remarks, more logistical, and then we'll give the mic back to the President to initiate this proceeding.

So, the initial Notice of Public Hearing 2018-H-O1 was published on June 9th to announce the opportunity for participant funding for intervenors. A Revised Notice was published on December 21st to add January 23rd, today, to the hearing dates, given lots of interest in this matter.

Submissions from CNL and CNSC staff were filed on November 10th, 2017. The public was invited to participate either by oral presentation or written submission. December 11th was the deadline set for filing by intervenors.

The Commission received 95 requests for intervention. Six requests were received significantly after the deadline and were not accepted. Another one was denied as it was related solely to the near surface disposal facility which is not the matter being discussed this week.

January 10, 2018 was the deadline for filing of supplementary information and we note that presentations have been filed by CNSC staff, CNL, as well
as intervenors. A supplementary written submission was also filed by CNSC staff and was provided to all participants.

Participant funding was available to intervenors to prepare for and participate in this public hearing. Six groups or individuals are receiving funding. The funding decision is available on the CNSC website.

All documents are available at the reception either electronically or in paper format. As a pilot project, the Commission made all the submissions downloadable on its website.

The way we will proceed is that today we will first hear presentations by CNL and CNSC staff. After that we will hear the presentations from intervenors.

There will also be an afternoon break and one for dinner around 5:30 for a one-hour period.

The presentations by intervenors will follow the order that is listed on the Revised Agenda and a copy of that Agenda is available in the back room.

Time permitting, the Commission will also review written submissions at the end of each day. These written submissions have already been read by the Members and we will address each of them before the close of this hearing.
Fifty-one intervenors are scheduled to present orally this week. While the presentations are limited to 10 minutes, Commission Members will have the opportunity to ask questions after each presentation. No time limit has been ascribed for the question periods.

Your key contact persons will be Ms Louise Levert and Ms Johanne Villeneuve from the Secretariat staff and you'll see them going around or at the reception table if you need information regarding the timing of presentations and other matters.

Mr. President.

THE PRESIDENT: Thank you, Marc.

I would like to start this hearing with a few additional introductory remarks.

First, I would like to recognize that, as I said, we are holding this hearing in Algonquin traditional territory and we wish to thank you for your welcome here.

We are in Pembroke the next three days to consider the written submission or presentation from Canadian Nuclear Laboratories, CNSC staff and a large number of citizens and organizations who wish to express their opinions in the context of the Chalk River Laboratories operating licence renewal hearing.
I would like to clarify a few things prior to getting this hearing underway.

I wish to emphasize that the Commission is a quasi-judicial administrative tribunal and that, consequently, it is independent from any political, governmental or private sector influence. In fact, each Commissioner is independent from one another and also independent of the CNSC staff.

Interventions filed for this hearing include recommendations to the Commission. CNSC staff also make recommendations to the Commission, but it is the Commission Members who will render a decision based on all the evidence presented in the context of the hearing process.

The Commission Members are appointed by the governor-in-council on the basis of their achievements in their respective field of endeavour, as well as their excellent reputation amongst their peers.

Their mandate is simple: ensure that the use of nuclear is done in a manner that protects the environment as well as the health, safety and security of the workers and the public.

I would like to emphasize that the CNSC has no economic mandate and will not base its decision on
the economic impact of a facility. I will repeat: it is
the health, safety and security of the public and the
protection of the environment that guides the Commission
decision.

Finally, as I stated earlier, the
Commission is an administrative tribunal. It is willing to
conduct this hearing in or near the affected community and
to provide the forum where members of the public can
express their views on the matter at hand.

As the Commission is a tribunal and wishes
to hear all oral presentations and ask as many questions as
it deemed necessary on these, we ask that everyone respect
the decorum of a tribunal setting and assist with the
orderly, civil and respectful conduct of these proceedings.

The Commission will not tolerate
inappropriate behaviour and will take measures necessary to
ensure the orderly conduct of this proceeding in the same
way it does for all other proceedings it conducts in Ottawa
and in other communities.

So, with that I think we are ready.

**MR. LEBLANC:** Yes, Mr. President.

We have with us Ms Connie Mielke, I'm
hoping I'm pronouncing it properly, who is from the
Algonquin Community of Greater Golden Lake that will honour
us by conducting an opening prayer. So, we will have a little ceremony. I will invite --

**THE PRESIDENT:** Thank you for coming and the floor is yours.

**MS MIELKE:** Yes.

**MR. LEBLANC:** I will invite the Members to just stand down from the podium and we will start.

--- Commission Members stand down

**MS MIELKE:** Meegwetch. Thank you, Kichi Manido, Creator of all things for being with us today. Let us recall your original instructions and open our hearts to your guidance and realign ourselves to your service.

Meegwetch. Thank you, (Native language) Mother Earth for being with us today.

Meegwetch. Thank you, Wompanand Spirit of the East, Sowwanand Spirit of the South, (Native language) Spirit of the West, and (Native language) Spirit of the North.

Meegwetch. Spirits of the Earth, Air, Fire and Water, the life blood of Mother Earth.

Meegwetch, Grandfather Sun Kokomuus (ph). Grandmother Moon, Nokomuus (ph), Sky Nations, winged ones, finned ones, four legged, crawlers, little people, spirits of our ancestors, medicine helpers and allies for being
with us today.

Let us learn their medicines and their teachings so we may share them with others in a good way.

Great Spirit we say Meegwetch for your guidance and help so we may have peace, harmony and unity in our families, communities and our nation.

Great Spirit we say Meegwetch for guiding us to respect our differences and learn from them in all issues which we may face which divide us.

We say Meegwetch that you will help us on our paths to be caring, compassionate and sharing in our families, community and nation.

We say Meegwetch for the unity and sharing that you bring to us today at this gathering. We ask for your help so that no Algonquin person will be left behind or forgotten. Meegwetch, all our relations.

--- Pause

THE PRESIDENT: Okay. Before we proceed with the presentation I would like to note that there are some other government departments and municipalities joining us for this hearing and they're available to answer.

In attendance today I understand that we have Ms Shannon Quinn and Mr. Jon Osborne from Atomic

And Monsieur Gaëtan Lessard, du ministère de la Sécurité publique. Bienvenue.

Joining us by teleconference is Mr. Duck Kim from Environment Canada and Climate Change Canada. Mr. Kim, can you hear us?

MR. KIM: Thank you, Mr. President, we can hear you.

THE PRESIDENT: Anybody else that I missed?

MR. LEBLANC: Anybody else online? I think there's a Mr. Kim as well.

THE PRESIDENT: We will keep updating it. As we go through the next couple of days there will be new people joining us.

So, I'd like to turn the floor now to Canadian Nuclear Laboratories for their presentation as outlined in CMD 18-H2.1 and 18-H2.1A. I understand that Mr. Lesinski you'll make the presentation?

Over to you.
CMD 18-H2.1/18-H2.1A

Oral presentation by Canadian Nuclear Laboratories

MR. LESINSKI: Thank you, Mr. President and Members of the Commission. Good afternoon, ladies and gentlemen.

For the record, my name is Mark Lesinski, I am President and CEO of Canadian Nuclear Laboratories also known as CNL.

With me here today are David Cox, CNL's Vice-President of Operations and Chief Nuclear Officer, Kathy McCarthy, CNL's Vice-President of Research and Development. Also joining me, seated in the second row, are Shaun Cotnam, our Chief Regulatory Officer, Kurt Kehler, our Vice-President of Decommissioning and Waste Management and Kevin Daniels, right behind me, Vice-President of Health, Safety, Security, Environment and Quality.

We are here today before the Commission as part of our application for the renewal of the nuclear research and test establishment operating licence for Chalk River Laboratories' nuclear site.

The application is for a 10-year period which would commence on April 1st, 2018.
Our application is based on a track record of solid safety and environmental performance with trends of improvement in many important areas.

CNL has laid out a 10-year vision and plan for the Chalk River campus that will bring long-term viability to the site, evolving CNL's science and technology mission in parallel with constructing new infrastructure, decommissioning redundant facilities and performing environmental remediation.

Funding is laid out for the 10-year contract period which provides stability for planning into the future. CNL is fully confident that it will continue to safely operate the site under this proposed licence period.

Today I will provide you with an update on current operations and our plans for the future at the Chalk River Laboratories.

Following my remarks, Mr. Cox will discuss CNL's performance during the current licence period against defined safety and control areas.

Once our presentation is concluded, we'd be happy to answer any questions that you may have.

To begin, I think it's important to review the roles and responsibilities of the organizations within
the government-owned contractor operated management model, also known as the GoCo model. This slide illustrates these relationships.

Natural Resources Canada sets policy on behalf of the Government of Canada. AECL as a Crown corporation ensures that the Government of Canada's objectives are successfully met. As a main customer of CNL, AECL oversees the GoCo contract and CNL's performance. AECL also retains ownership of the sites, facilities, assets, intellectual property and decommissioning liabilities.

CNL is the operator and licensee of the Chalk River Laboratories campus. It is and will continue to be in full control of day-to-day safe operations of the site. CNL also has the capabilities, responsibilities and authority required to make all operational decisions at the Chalk River Laboratories. And as the licensee, CNL is fully accountable for meeting the regulatory requirements set out by the CNSC and other regulators.

The Canadian National Energy Alliance, or CNEA, a consortium that represents some of the world's most experienced nuclear engineering and management firms is the private sector company which owns 100 per cent of CNL's shares. CNEA has appointed CNL's Board of Directors and
senior leadership team.

Pictured here is the CNL Board of Directors which provides governance and oversight of our safety and environmental performance at CNL as well as delivery on our business commitments. The Board is made up of independent directors and CNL executive directors, including myself, Mr. Cox and Mr. Daniels. Together our Board members have over 200 years of leadership experience in the nuclear industry.

I know that implementation of the GoCo model has generated confusion for some individuals. I've read several interventions which make statements illustrating their misunderstanding. So, before moving on to the rest of the presentation, I will address these misconceptions head on.

First, CNL stands on its own as an organization. It existed and was operated safely and in compliance with all applicable regulations before CNEA took ownership of the company and it will continue to do so over time regardless of who the contract is awarded to. That is why CNL is referred to as the enduring entity in the GoCo model.

And that's what makes this model so appealing. It brings flexibility with fresh leadership
perspectives and solutions to address challenges and improve performance which the Government of Canada desires while retaining operational and safety excellence in its personnel. CNEA might come and go, but CNL is here to stay.

Which brings me to the second misconception that organizational changes to CNL's executive team are indicative of poor, unstable management. It's actually quite the contrary. When I came to CNL there was an evaluation period where we had to identify organizational skills, capabilities and strengths in order to develop our long-term strategy. To do so we brought in the right leadership to carry out that evaluation.

Once that process was complete and our future was clear, we brought in the right leadership to steer us through our next phase, which required expertise in: advanced reactor design, Dr. Kathy McCarthy; capital planning, Ted Preisig, our VP of Capital Projects; and, small modular reactors, Dr. Cory McDaniel, VP of business development. Here again the GoCo model gives us the flexibility to do so. I can bring in the right leadership when it's needed without compromising the safe operations of the site.

Finally, and perhaps most importantly,
there is a perception that CNEA puts profits ahead of safety, and that the GoCo model encourages the consortium to hastily complete projects in order to maximize revenue and minimize spending. To suggest that CNL is cutting corners to enrich CNEA comes from a fundamental misunderstanding about how CNEA earns revenue through the contract, so I want to clear that up for the record.

Under the GoCo contract, AECL establishes a series of deliverables on an annual basis, otherwise known as the annual program of work and budget, and performance measures are established based on this program. CNL determines how to fulfil the deliverables. Fees are associated with the successful completion of deliverables or achieving outcomes, whether it is better environmental performance, improved safety, increased revenue, or the completion of a decommissioning project. It is AECL that determines the fee based on our performance.

The GoCo contract also includes fee-reduction provisions that allow AECL to reduce the fee to zero should there be a serious safety incident. It is clear then, more than anything else, that the GoCo model incentivizes safety to be our top priority.

Furthermore, when additional revenue is earned or projects are delivered under budget, that money
is retained by the Government of Canada. In some cases, it may be reinvested into the Chalk River Laboratories, but it is not profit that is transferred to CNEA. In fact, Canadian taxpayers are the beneficiary.

However, let me be clear. Protecting the health and safety of our workers, the public, and the environment is paramount, our overarching performance measurement, and our primary value.

The GoCo model was well-designed by the Government of Canada. It ensures the site is operating with integrity but also with agility and flexibility, protecting Canadian taxpayer investment while bringing private sector rigour to the operation of the site in a quickly changing world.

Under the GoCo model, CNL has been given a clear mandate from the Government of Canada, which includes reducing the Government of Canada's nuclear legacy and historic waste liabilities, leveraging CNL's expertise and capabilities to fulfil federal and commercial needs for in-depth nuclear science and technology, and rebuilding the Chalk River Laboratories' facilities and supporting infrastructure.

I'm pleased to say we've already made significant progress toward these goals. CNL has developed
a long-term strategy to guide this work, which will create a stronger, more resilient and enduring national laboratory, with a revitalized talent pool, facilities and infrastructure. A copy of this strategy has been shared with stakeholders and is now available on CNL's website. This organizational transformation is broad in scope and encompasses the entire company. It also builds on the proud heritage of the Chalk River Laboratories, which has been instrumental in establishing Canada as an international leader in all facets of the nuclear industry.

The Chalk River Laboratories has served a critical role in the delivery of Canadian nuclear science and technology for over 70 years, supporting federal priorities in clean and reliable energy, public health, nuclear safety, and environmental stewardship.

The nuclear energy that powers our homes and the nuclear technology we use to fight against cancer was developed by scientists and engineers that make their homes here in the Ottawa Valley.

The Chalk River site is also home to scientific facilities that serve as a vital resource to federal, commercial and academic customers. Over 2,800 highly-qualified employees work at the site, including many world-leading experts in a variety of scientific and
technical disciplines.

While our work has evolved over the years, it continues to be fundamental to the Government of Canada's science and technology missions. Among other responsibilities, CNL supports the development of biological applications and improved understanding of the impacts of radiation on living things, enhances national and global security through non-proliferation and counterterrorism work, provides emergency preparedness and response capabilities, supports the safe, secure and responsible use and development of nuclear technologies, and carries out environmental stewardship and radioactive waste management services on behalf of the Government of Canada. We do so with an unwavering commitment to safe operations, and under strong oversight by the CNSC and other regulators.

Mr. President and Members of the Commission, in seeking this operating licence, I want to be very clear. Canadian Nuclear Laboratories has an absolute commitment to safety. We have operated safely during the current licence period, and made improvements that will continue to enhance safety at the Chalk River Laboratories and across the company. Building upon our established performance, we will continue to meet all regulatory
obligations during the proposed 10-year licence period.

Turning toward the next licence period, a significant change will be the permanent shutdown of one of our science and technology facilities, the NRU reactor, on March 31, 2018. NRU has served as a cornerstone of the Canadian nuclear industry for over 60 years, improving the quality of life of Canadians and people around the world as a source of industrial and medical isotopes. To date, over one billion patients have directly benefited from the life-saving medical treatments enabled by this facility. I'm sure that everyone in this room has been touched by cancer, and I am certain we can all agree on the important role that the Chalk River Laboratories has played in fighting this terrible disease. We want to continue this important fight in our next licence period.

NRU has also served as a major facility for neutron physics research, and is an important research and development tool in support of CANDU power reactors. Ground-breaking science and technology performed in this facility has led to major innovations in energy, biology, aerospace, transportation, advanced manufacturing, and nuclear security.

Through its 60-year life, this facility has served Canadians and the international community with
distinction. As we transition to a future without NRU, CNL has developed an integrated plan to transform the Chalk River campus through the construction of new world-class facilities, revitalization of essential site infrastructure, completion of decommissioning and environmental remediation activities, and establishment of long-term waste management solutions.

First, we must address our legacy buildings and facilities as part of the remediation of the Chalk River Laboratories' site. Our plan emphasizes the elimination of high-priority hazards and liabilities through decommissioning activities, and the establishment of long-term waste management solutions for wastes arising from past and current operations. This includes accumulated waste related to demolition of site facilities, commercial work, research underpinning the clean generation of electricity, and the production of life-saving medical isotopes.

At the Chalk River site, this work is already under way, using best practices for waste management, decommissioning and environmental protection. Planning and implementing these activities safely will generate space to allow construction of research laboratories that enable our nuclear science and technology
programs to flourish. CNL has a long history of providing waste-processing and storage services that protect the environment, comply with regulations, and ensure the health and safety and security of present and future generations.

During the current licence period, CNL realized a number of major achievements, including the repatriation of highly-enriched uranium under the Global Threat Reduction Initiative, improvements to our waste storage capabilities, including commissioning and operation of the fuel packaging and storage facility, hazard reduction in legacy liquid waste tanks, and development of a comprehensive interim waste storage plan for the Chalk River site, ensuring adequate storage capacity against forecasted waste.

Looking forward, we are further improving our waste program to prepare for the waste that will be generated from decommissioning and environmental remediation. We are implementing an integrated waste strategy and action plan that supports the cost-effective, efficient and timely life-cycle management, from generation to disposal, of all current and known future CNL-managed wastes. Implementation of this strategy includes strengthening our waste characterization capabilities, and improving our waste data tracking system.
These and other improvements will ensure that we are handling and managing the waste safely and effectively, that waste storage options are selected to minimize impact to workers and the environment, and that we optimize the quantities of clean waste, which can be treated as normal industrial waste. We are carrying out these activities in an integrated manner to ensure they are done in concert with other organizational priorities, such as operations and capital planning.

The majority of the decommissioning and demolition work is being self-performed by CNL employees. We are training integrated work teams to develop expertise, beginning with lower-risk buildings. With this progressive approach, decommissioning teams will continue to learn and build upon relatively low-risk experience, expanding into more difficult areas as they become more efficient in the treatment and management of industrial and radiological hazards.

During the current licence period, I am pleased to report that we have safely decommissioned 46 structures using planning and execution activities that ensure worker safety and environmental protection. This includes the safe demolition of the old 92-metre tall process and service water tower, removal of multiple
degraded legacy structures, and the demolition of obsolete buildings. Approximately 72,000 square feet have been turned back to brownfield useable land for Chalk River in the future.

Recently, the remaining legacy water in the NRX fuel bays was safely pumped to the CNL waste treatment centre. Further hazard reduction was accomplished by application of shielding and fixative to the bay floor and walls to effectively remediate potential releases to the environment.

The decommissioning approach is supported by the implementation of site-wide program controls to ensure protection of the workers, the public, and the environment. International decommissioning experience gained on multiple sites has demonstrated that the development of a trained and experienced workforce, with flexibility to move between buildings as conditions require, will be a key step in safely achieving decommissioning scopes of this magnitude.

Finally, we will look for simple solutions that are safe and cost-effective, and we will apply a risk-informed and graded approach, fully in keeping with CNSC requirements. This will allow us to apply techniques that are appropriate for the type of hazard, resulting in
cost-effective and safe decommissioning.

With the safe and permanent reduction of nuclear legacy liabilities, the Chalk River site will be strategically consolidated and modernized through an ongoing federal investment of more than $1.2 billion in new facilities and infrastructure. Through this transformation, the Chalk River Laboratories will continue to serve as a world-class national nuclear laboratory, delivering nuclear products and services to meet government, commercial, and public priorities, and for all the local residents that work at CNL, it will be a safer and much cleaner place to work.

CNL has already constructed a number of new buildings and laboratories during the current licence period, including a state-of-the-art laboratory complex, the Harriet Brooks building, a new tritium laboratory, our newly-renovated hydrogen isotopes technology laboratory, new shielded modular above-ground storage buildings, and our fuel packaging and storage facility.

The Government of Canada investment will also enable the construction of a new advanced nuclear materials research centre, a complex which will include new shielded facilities and many advanced active laboratories for research involving active or irradiated materials, a
new maintenance facility to enable the consolidation of multiple outdated support buildings into one efficient, secure and cost-effective support centre, a new business hub that will serve as a modern collaborative work environment for employees being relocated from decommissioned buildings, and a new logistics and warehousing facility located at the main entrance to the site. The building will consolidate activities currently carried out in multiple facilities, and will result in less vehicular traffic on the main campus.

As part of this revitalization, CNL is also carrying out several major infrastructure improvement projects, which will yield significant environmental, financial and safety benefits, including the delivery of natural gas to the Chalk River site, replacing the use of heavy oil in our powerhouse facility, which will reduce greenhouse gas emissions by over 25 percent at the site and result in significant annual cost savings, the construction of a new sanitary sewage treatment facility and a storm water management system, and engineering work now for a switchyard to make the site's electrical supply system more robust, and finally the completion of our domestic water project, undertaken in co-operation with our host community, the Town of Deep River, to bring potable water
to the site later this year. Overall, the Chalk River site is going through a major revitalization, resulting in new and exciting laboratories supported by updated and modern infrastructure.

This brings me to our science and technology programs. Over the next 10 years, CNL will grow its nuclear science and technology capabilities and services, combining federal and commercial priorities into research and development programs in sustainable energy, public health, nuclear security, and environmental stewardship.

Within these four areas of work, we have established seven strategic initiatives. They are alpha therapies, hydrogen technology, advanced fuels, cybersecurity, reactor life extension, nuclear forensics, and small modular and advanced reactors. For the purpose of today's hearing, I'd like to discuss three of these initiatives.

The first is our plans to demonstrate the commercial viability of a small modular reactor. Last year we issued a request for expressions of interest to initiate a conversation on SMR technology. We received responses from 80 organizations around the world, including 19 expressions of interest from technology vendors. It's
early in the process, and this work is subject to separate regulatory and licensing processes, but there is a clear interest in establishing an SMR industry in Canada.

Secondly, CNL intends to leverage its unique expertise and facilities in nuclear medicine to pursue commercial opportunities in targeted alpha therapies. Unlike existing therapies, which target cells in the vicinity of a tumour, both healthy and cancerous, alpha therapy targets just the cancer cell. Isotopes for this therapy must be processed in specialized facilities, which are available at our Chalk River site. Ultimately, CNL intends to become a leader in the preclinical research of targeted alpha therapy, and a partner in the global supply of these isotopes.

Third, building on Canada's 50-year investment in activities related to the CANDU reactor technology, CNL will continue to support the life extension and long-term reliability of the existing fleet of CANDU reactors, which accounts for over half of Ontario's power supply and approximately 16 percent of Canada's power supply. This has been a major responsibility for CNL for decades, and fulfils a critical public need for clean, safe and reliable energy.

This is an exciting time for CNL and
Canada, but that excitement extends beyond our borders. I've travelled extensively over the past year, and I'm not exaggerating when I say that there is international interest in the work that's going on at Chalk River Laboratories.

I'd now like to turn the presentation over to David Cox, our chief nuclear officer, who will discuss our performance over the last licence period.

David.

MR. COX: Thank you, Mark.

Good afternoon, Mr. President and Members of the Commission.

For the record, my name is David Cox, and I'm Vice-President of Operations and Chief Nuclear Officer at Canadian Nuclear Laboratories. I've worked at Chalk River for over 34 years, and like other long-standing employees I'm immensely proud of the science and technology achievements that have been made for Canada and the world through the Chalk River Laboratories.

Today, I will discuss CNL's performance during the current licence period, which has been assessed by CNSC staff against the safety and control areas defined in our licence. I'm pleased to say that CNL has achieved a satisfactory rating for all 14 safety and control areas.
For the purpose of today's meeting, I'll focus on six of the safety and control areas. They are fitness for service, the management system, conventional health and safety, human performance, radiation protection, and environmental protection.

I will also discuss our work to foster improved relationships with our local indigenous communities, CNL's public information program, and the pending closure of the NRU reactor before we invite questions from the Commission.

First, I'd like to begin with two safety and control areas that have been the subject of major improvement efforts. These are fitness for service and management system, both of which achieved satisfactory ratings during the current licence period.

Starting with fitness for service, the Chalk River Laboratory site is a complex mix of nuclear facilities, conventional, municipal, and business infrastructure. The fitness for service, safety and control area evaluates the reliability of system structures and components making up the overall site infrastructure, much of which is several decades old. CNL has been progressively implementing a long-term initiative to improve the fitness for service across the Chalk River
Laboratories in order to ensure safety and reliability of our facilities and the infrastructure. Under this initiative, CNL implemented new programs, including equipment reliability, aging management, and asset management, with supporting processes that have resulted in significant improvements in both operational safety and reliability. We've also made physical changes, such as upgrading and installing a significant amount of new equipment. Mark has already discussed our extensive $1.2 billion capital investment program, which has resulted in additional upgrades to our infrastructure that improve safety and reliability of our operations.

A very significant effort was also made to improve the fitness for service specifically for the NRU reactor and its support systems. This was through the execution of a 10-year integrated implementation plan. Improvements to equipment performance, maintenance outages, preventative maintenance, and reactor systems and components has substantially improved the NRU facility reliability. As a result, a satisfactory rating for the fitness for service, safety and control area was achieved last year.

The programs that support fitness for service will continue during the proposed licence period,
enhancing the safety and reliability of our nuclear facilities and the conventional infrastructure.

With respect to our management system, CNL has established an up-to-date, compliant and agile framework through which it manages and operates the Chalk River Laboratories. Improvements implemented early in the current licence period resulted in the management system achieving a satisfactory rating back in 2013.

More recently, revisions to the management system documents were implemented last year, which capture the requirements of the GoCo model. The management system documents apply to all CNL management activities, ensuring delivery against commitments within appropriate accountabilities and controls, and resulting in safe, effective and efficient conduct of work across all CNL lines of business, while continuing to ensure compliance to regulatory requirements.

CNL will continue to maintain our management systems, further integrating compliance with key performance metrics of the business, while being responsive to an intricate regulatory environment.

Turning to conventional health and safety, CNL’s Occupational Safety and Health Program is designed to prevent accidents and injuries while protecting employees,
contractors and visitors at the Chalk River Laboratory site.

This includes processes for the management of hazards to health and safety of employees and other workers.

An important recent evolution to further improve delivery of the Occupational Safety and Health Program has been to deploy specialists in industrial hygiene, occupational safety and radiation protection directly into the line organizations to provide access to technical assistance for the planning, review and oversight of work.

Other continuous improvement actions to our training procedures and communications have strengthened our occupational safety and health processes.

CNL has maintained strong health and safety performance since 2011, demonstrated through a clear trend in the reduced number of lost time injuries and the number of days lost, which you can see on this slide.

A very similar trend exists for the reduction in the frequency and severity of injuries as well.

The recent accident and injury rates at CNL are comparable to the rates at Department of Energy
Nuclear Laboratory sites and represent good industry practice.

This shows that our program improvement measures have gained traction across the organization. CNL will continue to further improve our occupational safety and health program performance outcomes in the proposed licence period.

This leads me to human performance, a safety and control area that is closely tied to health and safety.

At CNL our human performance program helps to strengthen our safety culture, promote safe work practices and reinforce the use of human performance methodology through training, communication and observations.

During the current licence period CNL improved relevant processes and developed training to nurture a healthy safety culture and encourage organizational learning based on strong human performance principles and personal accountability.

Among other improvements CNL created a Human Performance Steering Committee, implemented improvements to its systematic approach to training, commissioned a new Human Performance Laboratory for
practical applications, developed a Field Observation and Coaching Fundamentals Workshop which is being applied, and established an improved nuclear safety policy across the organization.

I’m pleased to say that these activities are making a difference.

During the licence period the number of unplanned situations and events at the Chalk River Laboratories has decreased.

Concurrently, an internal self-assessment has determined that the quality of our reporting has also improved during the licence period.

In a few minutes Mark will discuss the results of an employee engagement survey that we have recently conducted, but I also want to highlight the employee feedback on safety, which stands out as being well above North American norms.

These results clearly show that our employees personally recognize their role in achieving safe outcomes.

CNL will continue to apply human performance tools to further improve our safety performance. Activities planned include increasing the ownership and training of human performance processes and
practices throughout the organization and better integration of safety culture principles and process improvements to further empower our workforce.

CNL’s Radiation Protection Program provides an overall framework for ensuring that exposure to ionizing radiation is kept as low as reasonably achievable for all CNL employees, visitors and contract workers.

Since our licence renewal in 2011 the Radiation Protection Program has been assessed against international industry best practices. Opportunities to improve our control of radiological contamination and control of high radiation areas were identified as areas for improvement.

CNL has implemented a number of improvements to the Radiation Protection Program in response to these assessments, including redesignation of radiological areas to better align with industry best practices.

CNL also completed several improvements relating to program training and documentation for the program.

Other improvements to source term reduction, shielding and containment have been implemented, resulting in reductions to worker dose and to
Examples include the introduction of new contamination monitoring equipment, the implementation of remotely operated tools and equipment for high dose rate activities, and improvements to pre-job planning for high hazard work.

Successful implementation of the Radiation Protection Program has ensured that no regulatory limit was exceeded during the licence period and a positive trend of lower average worker doses is evident in recent years.

CNL has extensive plans to further improve this program during the proposed licence period, including updates to documentation manuals, the reduction in high contamination zones on site, better use of physical barriers and signage, improvements to training and incorporation of radiation protection practices into the design and construction of our new buildings and facilities.

These enhancements will build on decades of program experience to ensure that we meet international best practices.

CNL’s Environmental Protection Program has maintained an ISO 14001 registration for the Chalk River site since 2004. The foundation of this program is our
environmental policy, which states our commitment to protecting the environment and establishes the overall principles for environmental responsibility and performance expected of all employees.

During the current licence period this policy was amended to include a clear commitment to sustainability, a change that aligns with standards set by the Government of Canada and our work to ensure a clean and secure world.

Environmental performance at the Chalk River Laboratories is evaluated through our Site Integrated Environmental Monitoring Program, comprised of three elements: effluent monitoring, environmental monitoring and groundwater monitoring.

During the current licence period over 350,000 analyses were performed on samples gathered for our Integrated Environmental Monitoring Program at approximately 400 locations inside the controlled and supervised area of the Chalk River Laboratories site and in and around local communities downstream and upstream from the Chalk River Laboratories in both Ontario and in Quebec.

Monitoring is conducted through the routine collection and monitoring of samples from every significant compartment involved in the migration of
contaminants throughout the environment.

Monitored media include ambient air, effluents, Ottawa River water, other surface waters, both on and off site, and foodstuff, including drinking water, fish, garden produce, large game and farm animals.

Groundwater is also monitored from around the perimeters of our waste management areas and nuclear facilities.

Overall the results for all monitored media continue to confirm that radiation doses resulting from our Chalk River operations represent a small percentage of the regulatory dose limit for members of the public, are well below the Chalk River licence listed dose constraints and the typical background dose from natural radiation.

In the proposed licence period emissions from the site will significantly decrease due to a number of improvement projects and operational changes.

Now that CNL has ended the routine molybdenum isotope production mission, related emissions of mixed noble gases and iodine isotopes have already ceased. Typically these emissions represented approximately 1.7 per cent of the regulatory dose limit.

As a result of the conversion of the Chalk
River Laboratory’s powerhouse to natural gas last year, we anticipate that nitrogen and sulphur oxides particulates and mercury emissions will be reduced by over 80 per cent, and greenhouse gas emissions will be reduced by over 25 per cent.

The shutdown of the NRU reactor will eliminate argon-41 emissions. Currently these emissions are about 5 per cent of the regulatory dose limit and represent more than half of the total airborne emissions from the Chalk River site.

Water from the Ottawa River intake will decrease to less than 25 per cent of the present levels and thermal emissions to the river will be eliminated.

In addition, CNL’s new sewage treatment facility, which is currently scheduled for completion next year, will enable CNL to meet the upcoming federal limit for chlorine and provide a modern, reliable facility with additional capacity.

During the current licensing period several environmental remediation projects were also completed. For example, CNL completed the installation of a permeable reactive barrier to remediate the groundwater plume coming out of waste management Area A, and a cover was installed on waste management Area C, which
significantly reduces the tritium plume discharged into Duke Swamp.

We also continue to operate and maintain groundwater treatment at Spring B, the chemical pit and the Wall and Curtain.

A project is underway to upgrade the capacity of Spring B groundwater treatment system, which will be completed later this year.

Other environmental remediation activities include the development of screening levels to determine the remediation requirements across the site and development of a comprehensive environmental data management system.

The data management system will allow for large volumes of current and historical environmental information to be stored and managed in a central repository. The goal is to enhance CNL-wide data accessibility and aid users in acquiring a holistic view of the environment, which will support optimum decision-making for the development and management of CNL activities.

The risks and liabilities associated with Chalk River are being progressively reduced through management and clean-up of the contaminated areas.

The safe remediation of the stored waste,
contaminated soil and groundwater contamination of the Chalk River site will continue throughout the proposed licence period and will be accelerated where that is feasible.

Ultimately, to enable large scale decommissioning and remediation of the Chalk River labs, a waste disposal facility will be required. Until there is a decision on disposal, CNL will continue to minimize radiological waste and monitor areas of concern based on health safety and environmental risk evaluations.

During this period all non-releasable waste will continue to be placed in interim storage. Planning is underway to ensure that interim waste storage needs will continue to be met into the future.

In managing these environmental responsibilities, CNL works to build relationships with local environmental groups and stakeholders through its Environmental Stewardship Council. During three meetings a year, council members are presented with information about CNL and our environmental practices and are given the opportunity to discuss the CNL programs.

These meetings provide CNL with a wide range of viewpoints on our environmental practices while providing stakeholders with important environmental
information related to our operations.

Overall CNL considers the environment as an integral component in all of our decision-making and we work tremendously hard to minimize the already low impact of our activities to the benefit of future generations.

CNL continues to engage with local indigenous communities on activities related to the general operation of the laboratories and environmental and employment matters. These engagement activities are ongoing to establish long-term, mutually beneficial working relationships with communities in proximity to our site.

CNL recently worked with the Algonquins of Pikwakanagan First Nation to host a career day and tour of the Chalk River Laboratories to discuss employment opportunities available at the site.

CNL also works with the Earthwalkers of the Algonquins of Pikwakanagan, an environmentally-focused youth group who annually visit the Chalk River site to participate in field work with our cultural resources team.

Looking forward, engagements specific to projects has been augmented through the implementation of the Aboriginal Engagement Licensing document, the reg doc. This has already led to a number of activities, including site visits, group meetings,
information sessions and regular project updates.

Indigenous groups engaged over the past 18 months include the Algonquins of Ontario, which include the Algonquins of Pikwakanagan, the Algonquin Anishinabeg First Nation Council, the Algonquin Nation Secretariat, the Williams Treaties First Nation communities, Eagle Village First Nation, Kitigan Zibi Anishinabeg First Nation, Algonquin Anishinabeg Nation Tribal Council and the Union of Ontario Indians and the Métis Nation of Ontario.

I would now like to take a few minutes to discuss CNL’s public information program which seeks to build public awareness and understanding for the work that we carry out on behalf of Canadians.

This is an established platform to sustain open and honest communication with our stakeholders. This is done through a number of vehicles, including our corporate website, community meetings, conventional media, recruitment materials and special events.

In recent years CNL has also developed a social media strategy to better engage online stakeholders with nearly 5,000 followers on its platforms, including Twitter, Facebook, YouTube and LinkedIn.

We continue to publish bilingual newsletter Contact that is mailed to approximately 50,000
households across Renfrew and the Pontiac Counties and which informs readers on the nuclear science and technology activities undertaken at the Chalk River Laboratories.

Education is also a key objective within the program. CNL has conducted dozens of tours for local secondary and post-secondary students and participated in several scientific and technology based educational events, including the Renfrew County Regional Science Fair and the Canada Science and Technology Museum’s Cool Science Saturday.

We are also entering a partnership with the Foundation for Student Science and Technology to launch a new series of national programs targeted to exceptional youth pursuing innovative careers in science, technology, engineering, arts and mathematics.

And this past year we held an open house that welcomed over 1,700 public visitors to the Chalk River Laboratories site to learn more about CNL. Based on a survey we conducted, I’m pleased to say that over 90 per cent of respondents indicated that they have a better understanding of the work done at the laboratories. It also served to give local residents important context on our past accomplishments, transformation of the site and the organization and our intended future.
Before I conclude my remarks, I would like to discuss NRU, a facility for which work has improved the facility through our integrated implementation plan during the current licence period.

I’m pleased to say that NRU will complete its service in a condition that’s safe or safer than it has ever been. We continue to improve how we operate, maintain and work within the facility and successfully met the fitness for service safety and control area in the current licence period.

In preparation for closure, CNL has developed a detailed permanent shutdown plan to ensure a safe and compliant transition to a state that is suitable for storage with surveillance, with the facility eventually being turned over to the decommissioning organization.

This will include the safe shutdown and ancillary facilities, with operational waste removed and systems laid up.

This transition has a clear and direct impact on our employees.

In response to these workforce changes and to prepare for future requirements, CNL developed a corporate human resources strategy and plan that includes a retain, retain and redeploy initiative for our colleagues.
in NRU and the related fuels and isotope facilities.

CNL employees required for the continued operation of NRU have been retained and will enable the safe operation of the reactor until its closure later this year. Overall approximately 97 per cent of the employees most immediately affected by the closure of NRU have redeployment paths already identified.

In closing, I would like to clearly state our position to the Commission in echoing Mark’s comments from earlier in the presentation.

Canadian Nuclear Laboratories has an absolute commitment to safety. We’ve operated safely during the current licence period and made improvements that will continue to enhance safety at the Chalk River Laboratories and across the company.

In building upon our established performance, we will continue to meet all regulatory obligations during the proposed ten-year licence period.

Our application is based on a track record of solid safety and environmental performance with trends of improvements in many important areas. This performance is based on mature programs that are built upon decades of experience with an injection of international best practices introduce through the GoCo model. CNL has laid
out a ten-year vision and a plan for the Chalk River campus that will bring long-term viability to the site by evolving CNL’s science and technology mission, in parallel with constructing new infrastructure, decommissioning redundant facilities and performing important environmental remediation.

Funding is laid out for the ten-year contract period which provides stability for planning into the future.

Leadership will continue to be adjusted as needs change for the organization. However, the robustness of our programs and the experience and the dedication of our 2,800 employees is the foundation for CNL as the licensee and as the enduring entity, as Mark described.

CNL is fully confident that we will continue to safely operate the site under this proposed licence period.

Thank you for your time and I will now turn it over to Mark for final comments.

MR. LESINSKI: Thank you, David.

Before I finish our prepared remarks today, I will update you on one final item.

This is a period of transformation for CNL, so it’s important that we maintain effective
communication with all of our employees and to better understand how they view this transition and to make sure they feel informed and empowered in the future of the organization.

So in that end we launched an annual employee survey in 2016 and we repeated it again in 2017.

The good news is that we saw a significant increase in survey participation this year. The data we received also show that employees are seeing organizational progress, with strong improvements in most of the survey questions and with zero significant declines.

I personally read each and every one of the hundreds of comments sent to me through this survey.

The feedback I received tells me that our employees are more optimistic about CNL’s future and that they believe the company has a strong safety culture to build on.

I take this as a strong indication that CNL’s long-term strategy is guiding the company in the right direction.

So in closing, I would like to direct your attention to the final slide of our presentation here, which shows our buildings and facilities on the banks of the Ottawa River, also known as the Kitchissipi.
I know that the focus of many interventions is the preservation of this body of water and so I want to be clear. The protection of the Ottawa River is just as important to CNL and its employees as it is to our intervenors.

The people at CNL work beside the Ottawa River. They make their homes by the river. Their families and their children swim in the river, boat in the river, fish, drink the water that comes from it. It’s part of our daily lives.

And that’s why we’re working to make it even safer for the future. This is our home too.

With that, I would like to thank you for your time today, Mr. President, and Members of the Commission. This concludes our prepared remarks.

We would now be happy to take any questions that you may have about our application to relicense Chalk River Laboratories.

Thank you.

THE PRESIDENT: Thank you.

Before we move into the presentation, we would like to hear from CNSC staff, as outlined in CMD 18-H2, H2.A and H2.B.

I understand, Ms. Tadros, you will make
the presentation. Please proceed.


Oral presentation by CNSC staff

MS TADROS: Thank you, sir.

Good afternoon, Mr. President and Members of the Commission.

For the record, my name is Haidy Tadros. I am the Director General of the Directorate of Nuclear Cycle and Facilities Regulation at the CNSC.

With me today, and on my left, are my colleagues, Mr. Jean LeClair, Director of the Nuclear Laboratories and Research Reactors Division, as well as Mr. Nhan Tran, Senior Project Officer of the same division.

We are joined by CNSC colleagues here in Pembroke, and in Ottawa via teleconference, who are familiar with this file and are available to answer any questions the Commission may have.

Our presentation today will discuss Canadian Nuclear Laboratories, or CNL, application to renew the site licence for the Chalk River Laboratories requesting authorization for continued operation for a period of 10 years ending March
Our presentation identified as CMD 18-H2.B provides a summary as well as highlights from CNSC staff's written submissions found in CMD 18-H2 and the supplementary submission CMD 18-H2.A.

This slide provides the contents of our presentation today. We will begin by first summarizing the purpose of this hearing, followed by an overview of the Chalk River Laboratories site.

We will then highlight CNSC staff's review of the licence application as well as CNSC's regulatory oversight activities of the Chalk River Laboratories site.

Specific to concerns raised by intervenors on the licence and LCH, we have a few slides to describe the licence and clarifications and improvements made to the Chalk River Laboratories licence and LCH.

Lastly, we will summarize CNSC staff's conclusions and recommendations to the Commission on the licence renewal request by CNL.

Before we get into our presentation there are a few corrections that need to be had. The following four items are corrections to CNSC staff's CMD 18-H.2:

On page 39 of section 3.6.3.1, CNL mean time between failures improved to 565 hours;
On page 46 of section 3.7.3.1, the effective dose was assessed for 6,766 non-nuclear energy workers;

On the same page 46 of section 3.7.3.1, the maximum effective dose for a nuclear energy worker since 2012 was 0.74 milliSieverts;

And lastly, on page 49 of section 3.7.3.1 the 2011 event referenced in the footnote to the Table 7 predates 2012.

Please note these four changes do not affect CNSC staff’s overall conclusions. We do apologize for any confusion this may have caused.

The next slide provides the purpose of this hearing.

CNL's renewal application was submitted to the CNSC in March of 2017. In their submission, CNL has requested that the Commission renew the Chalk River Laboratories operating licence for a period of 10 years carrying over activities that have already been approved in the current licence.

It is important to clarify at this point, and for the record, that Commission consideration of a permanent waste disposal facility, referred to as a surface disposal facility, or NSDF, is excluded from this hearing.
Additionally, Commission consideration of decommissioning activities for the Nuclear Power Demonstration Reactor, decommissioning activities for the Whiteshell-1 reactor and any consideration related to a small modular reactor are also excluded from this hearing.

I will now pass the presentation over to Mr. Jean LeClair who will provide an overview of the site.

**MR. LeCLAIR:** Bonjour, M. President et Membres de la Commission.

My name is Jean LeClair. I am the Director of the Nuclear Laboratories and Research Reactors Division.

The next few slides will provide an overview of the Chalk River Laboratories and discusses the activities carried out at this facility.

Chalk River Laboratories are owned by the Government of Canada through Atomic Energy of Canada Limited, or AECL. The site is operated by CNL.

The site is located near Chalk River on the south bank of the Ottawa River in the province of Ontario.

Chalk River Laboratories, or CRL, has been in operation since 1944 and is host to a wide variety of activities such as nuclear research and development,
isotope production and nuclear services.

CNSC maintains a site office at the Chalk River Laboratories to provide day-to-day regulatory oversight of the authorized activities.

This image highlights the CNSC site office and a few facilities at the Chalk River Laboratories. As you will see on the right corner, we can see the NRX reactor which was shut down in 1992. To the left of it we can see the NRU reactor which is planned to be shut down at the end of March of this year. We can also see where the CNSC site office is located on site. As well, we can see the Harriet Brooks building which CNL briefly mentioned in their presentation as a new facility for doing research.

The Chalk River Laboratories site licence includes the operation of research reactors, including the NRU reactor, nuclear fuel development and fuel fabrication facilities, Class II prescribed equipment, nuclear laboratories and waste management facilities including waste treatment, packaging and storage facilities.

The Chalk River Laboratories were historically owned and operated by AECL. Chalk River Laboratories is the largest nuclear research facility in Canada, having made significant contributions in multiple fields of science, nuclear research and nuclear medicine.
In recent years there have been changes to the licensee's operating organization. In February 2013 the Government of Canada announced its intention to engage a private sector contractor to manage operations at Chalk River Laboratories under a government-owned contractor-operated business model.

To achieve this model, CNL was first created as a subsidiary of AECL and the Commission transferred the CRL licence to CNL, who remain the licensee.

Finally, the process was completed when the management of CNL was contracted to Canadian National Energy Alliance, or CNEA, in 2015.

Under this model CNL remains the licensee and operator of Chalk River Laboratories and continues to be subject to the same regulatory requirements and obligations. The CNSC continues to provide regulatory oversight of CRL.

In April 2016 CNL applied for an amendment to the Chalk River Laboratories licence to align the end of the licence period with a planned permanent shutdown of the NRU reactor. The shutdown of the NRU reactor represents a major change in site operations and a major change in overall site risks. This would also allow CNL management
further time to implement organizational changes and further develop longer term plans for the site, prior to applying for a longer licence term.

Recognizing the pending closure of NRU and the organizational changes taking place for CNL, CNSC staff concurred with the proposed approach and recommended a licence with an expiry date of March 31st, 2018.

Following public hearings, the Commission issued a licence to CNL authorizing continued operation to March 31st, 2018.

CNL's current licence authorizes a broad range of activities at the Chalk River site. Construction, operation, safe storage, and decommissioning are all authorized and currently conduct activities at Chalk River Laboratories. Changes that fall within the licensing basis are permitted subject to CNSC staff verification to ensure compliance.

The licence includes the authorization to accept waste from off-site clients. This authorization has been in place at CRL for several decades.

Looking ahead, CNSC staff note that the pending permanent shutdown of NRU at the end of the current licence represents the most significant operational change at CRL, an overall decrease in site risks.
Focusing now on the licence application, CNSC staff have reviewed and assessed CNL's licence application and are recommending a 10-year licence period. The proposed licence and draft licence conditions handbook have been prepared following the standardized format and wording that has already been incorporated in several Class I licences that have been issued following public hearings.

The proposed licence and draft LCH provide clarity and conciseness, while maintaining regulatory rigour and no reduction in regulatory requirements or oversight for the proposed facilities and activities going forward. The most significant change in the licence requirement is as a result of the permanent shutdown of the NRU and the resulting change in site risk.

The proposed licence does not authorize a permanent waste disposal facility or a near surface disposal facility referred to in CNL's application. This will be the subject of a future public hearing.

The permanent waste disposal facility, or NSDF, referred to in CNL's application -- oops, that's a repeat. Carry on.

The next few slides discuss in further detail CNSC staff's review and assessment of the CNL licence renewal application.
CNL submitted its licence renewal application in March 2017 requesting a 10-year licence term. CNL’s application identified six areas of focus for CNL during the proposed licence period.

CNL has reaffirmed its intention to permanently shut down the NRU reactor.

CNL has identified in its application its plan to further improve its management system.

CNL also plans to continue with its science and technology program, further infrastructure improvements and continuing to advance on the decommissioning of facilities and waste management initiatives at CRL.

CNSC staff note that five of the six activities are within the current licencing basis. The permanent closure of NRU represents the most significant change in currently authorized activities.

The six area focus is the proposed implementation of the near surface disposal facility which, as previously noted, is out of scope of this licencing hearing.

Just to provide a bit of background on where this particular project is at, CNL has submitted a separate licence application for the proposed construction
of the NSDF. The project is undergoing an environmental assessment under the Canadian Environmental Assessment Act. The NSDF application will be considered by the Commission at a future hearing.

Furthermore, CNSC staff would also like to clarify that the proposed decommissioning of the nuclear power demonstration reactor, or NPD, in Rolphoton, as well as decommissioning of the WR-1 reactor are covered under separate licences and will not be considered in this hearing.

CNSC staff carried out a review and assessment of the CNL application against CNSC regulatory requirements. CNSC staff considered the performance history of Chalk River Laboratories, including the results of CNSC compliance verification activities over the last five years, and the review of performance data in the areas of radiation safety, environmental protection and workers safety.

CNSC staff also reviewed CNL's implementation of CNSC regulatory documents and industry standards such as the Canadian Standards Association, or CSA standards, over the last five years and reviewed plans for implementation of recently-published standards and regulatory documents.
In addition, CNSC staff reviewed CNL's public information and community outreach program. The result of these reviews have led to CNSC staff to conclude that CNL has met the licencing requirements for Chalk River Laboratories.

Further supporting CNSC staff assessment and, in particular, in the safety and control area of environmental protection, CNSC staff conducted an environmental assessment under the Nuclear Safety and Control Act. The EA under the NSCA assessed environmental protection measures, environmental risk assessments, compliance reports and data gathered in the CNSC independent environmental monitoring report.

CNSC staff's assessment concluded that CNL has made and will continue to make adequate provision for the protection of the environment and the health of workers and the public.

The next few slides discuss the draft proposed licence and licence conditions handbook.

CNSC staff's supplemental CMD 18-H2.A provides an overview of the licence reform at the CNSC and provides additional clarity on the proposed licence and draft LCH for CRL.

In 2011 the CRL licence was issued
accompanied by an LCH. The safety and control area framework and the licensing basis concept were at their early stage of development and implementation and the LCH captured the CNSC practices on regulating CRL activities at that time.

In addition the LCH captured extensive details in association with the continued operation of the NRU reactor. The licence and LCH included extensive repetition and paraphrasing of texts found in CNSC regulatory documents and industry standards. The LCH also included detailed CVCs to capture requirements that had not yet been captured in an industry standard or regulatory document.

At the public hearing of April 6, 2016 for the renewal and amendment of the CRL licence, CNSC staff informed the Commission that a modern licence and LCH would be prepared for the next licence renewal.

Since then, CNSC staff undertook a thorough review of the current Chalk River licence to incorporate the various improvements to the format and content while maintaining or increasing the rigour in regulatory requirements.

Staff's supplemental CMD 18-H2.A provides a detailed table that demonstrates how the proposed licence
conditions and LCH maintain the rigour of the existing
licence conditions, while eliminating duplication,
redundancy and paraphrasing as appropriate.

The resulting draft licence conditions
handbook provides increased clarity and conciseness while
maintaining or increasing regulatory requirements for the
activities which are proposed in the licence application.

Focusing further on the proposed licence
itself, the proposed CRL licence uses standardized wording
which has been applied across multiple Class I facilities.
The proposed licence maintains the requirement that the
licensee operate within the boundaries captured in the
licensing basis. Changes are permitted during the licence
period as long as they are in compliance with the licence
conditions and fall within the licensing basis.

CNL continue to be required to notify CNSC
staff of changes. Staff will then verify that the changes
meet requirements and are within the licensing basis.

CNSC staff carry out this verification of
changes on a continuous basis, as the licensee's operations
and documents evolve.

The proposed licence conditions requires
that CNL implement and maintain programs. The proposed
standard licence conditions span all 14 CSAs with the LCH
specifying how the requirements are expected to be met.

Elaborating a bit further, the licence itself always makes it clear how the LCH is to function and it is important to the understanding and enforcement of the licence. The proposed CRL licence is no different and the link between the licence and the licence conditions handbook is stated at Part 5-C.

The Chalk River Laboratories licence conditions handbook provides compliance verification criteria used to verify compliance with the conditions set out in this licence. In other words, the LCH sets out what measures will be required in order to be found to be in compliance with the licence. The licensee complies with the licence by adhering to the criteria spelled out in the LCH. As such, the licensee would risk a finding of non-compliance with a licence if it did not respect the CVC set out in the LCH respecting that licence. Compliance with the licence requires adherence to the CVC and the LCH.

In recommending a 10-year licence term, CNSC staff took into consideration the following: CNL's operating experience and demonstrated compliance in carrying out the activities under its current licence; the robustness of CNL's existing program that provide assurances that safety-significant activities are well
managed and safety is maintained, and AECL's 10-year vision for the Chalk River Laboratories and CNL's projects align to that vision.

Furthermore, throughout the proposed licence term, communications with the Commission and public engagement will carry on as a result of reporting requirements. This includes the presentation of regulatory oversight reports to the Commission in public meetings and reporting on events of potential significance to health, safety and environment or of public interest.

In addition, any proposed changes that fall outside of licencing basis will require authorization by the Commission through the public hearing process.

CNSC staff note that CNL will remain the licensees. As has been done in the past, the Commission will be informed of any major changes in the executive overseeing the management and control of activities under the licence.

Summarizing the last slides, CNSC staff recommend a 10-year licence period from April 1st, 2018 to March 31st, 2028. The draft proposed licence applies standardized wording of licence conditions which refer to licensee programs, the LCH then sets out the compliance verification criteria that includes reference to CNSC
regulatory documents and standards which are then used to enforce the licence.

Next, a few slides on CNSC's regulatory oversight of Chalk River Laboratories.

The CNSC has a robust regulatory framework in place to ensure the continued safe operations of licence nuclear facilities. Regulatory oversight is provided by CNSC staff to ensure licensees operate in a safe manner and in compliance with the requirements of the Nuclear Safety and Control Act and associated regulations, as well as licence conditions and applicable regulatory documents.

The CNSC verifies compliance through site inspections and also by desktop review of operational activities and licensee documentation. In addition, licensees are required to report routine performance data and unusual occurrences.

CNSC staff carries on investigation of unplanned events or accidents that occurs at the licensee's site. To complement existing and ongoing compliance activities, through the independent environmental monitoring program, or IEMP, CNSC staff collects samples of environmental media and analyze them in CNSC's analytical laboratory.

CNSC's approach to compliance includes
activities to encourage compliance, verification to assess compliance and graduated enforcement actions in cases of non-compliance.

The attached table is presented in staff's CMD 18-H2. The column for 2017 has been updated to include the most recent information up to the end of 2017. The final numbers will be greater as the final time accounting is completed.

Since 2012, CNSC staff spent more than 19,000 person days of regulatory oversight effort. Over the same period, CNSC staff conducted 158 onsite compliance inspections as well as numerous other site visits, reviews, meetings and events involving CNSC's technical specialists.

CNSC staff note that typically performance history evaluations carried out by CNSC staff in support of licence hearings only covers the previous licence period. Since CNL's current licence was granted for a short period of 17 months to provide the Commission more meaningful trending data, CNSC staff have provided information in CMD 18-H2, dating back to 2012. Compliance verification activities conducted by CNSC staff include desktop reviews, a program implementation and performance reviews that report all events, and a review of CNL's response to these events and any follow-ups. In addition, CNSC Staff conduct
on-site inspections.

As you will observe on the table, the numbers will fluctuate from year to year as resources are allocated to address licensing compliance priorities for that year, which assures regulatory oversight at all times.

The CNSC maintains a site office at the Chalk River Laboratories, with CNSC inspectors present to provide day-to-day regulatory oversight of the site. Since 2012, CNSC staff oversight has covered all facilities at the Chalk River Laboratories' site. CNSC oversight includes reviews of CNL's responses to events.

The implementation of corrective actions is continually monitored to closure by CNSC Staff and is tracked using the regulatory information bank tool. When a non-compliance is identified, CNSC Staff assess the significance of the non-compliance and determines the appropriate enforcement action. In all cases CNSC Staff reviewed CNL responses to non-compliances and confirmed that suitable actions had been taken to address the non-compliance.

CNL is required to report situations or events that, if no action is taken by the licensee, could lead to a serious adverse effect on the environment or serious risk to the health and safety of persons or the
maintenance of security.

Additionally, as required by Regulatory Document 99.3, CNL has implemented a public information program that includes a disclosure protocol. Under the requirements of this program, CNL provides information to the public on events and incidents of interest to its stakeholder community. When an event is reported to CNSC Staff, staff review the event to ensure suitable corrective actions are taken by CNL as needed.

Event reports that are significant in nature or may be of significant public interest are brought to the attention of the Commission during public meetings by CNSC Staff. Since 2012, seven such events have been presented to the Commission as outlined in CNSC Staff's CMD 18-H2.

CNL continues to provide periodic reports and event reports required by the reporting program. In December 2017, CNSC Staff presented to the Commission Regulatory Document 3.1.2 on reporting requirements for non-power reactor class I facilities. This document improves clarity and consistency of reporting for non-power reactor Class I nuclear facilities. Once approved by the Commission and published, the document will be implemented by CNL and added to the LCH for Chalk River Laboratories.
I will now pass the presentation over to Mr. Nhan Tran, who will provide a summary of the performance assessment of Chalk River Laboratories.

**MR. TRAN:** Good afternoon, Mr. President and members of the Commission.

My name is Nhan Tran, and I'm a senior project officer with the Nuclear Labs and Research Reactors Division.

The next few slides will provide an overview of CNSC Staff's performance assessment of the Chalk River Laboratories.

CNSC regulatory oversight is performed in accordance with a standard set of 14 safety and control areas, or SCAs. The SCAs are technical topics used across all CNSC regulated facilities and activities to assess, evaluate, review, verify, and report on licensee regulatory requirements and performance.

As stated in CNSC Staff's written submission, CMD 18-H2, CNL has maintained or improved their performance ratings across all SCAs since 2012.

To summarize CNSC Staff's evaluation of CNL's performance since 2012, the programs at the Chalk River Laboratories have met regulatory requirements and are effectively implemented, worker doses and environmental
releases have remained below regulatory limits, CNL's performance has been "satisfactory" or has improved to "satisfactory" in all SCAs, and throughout Chalk River Laboratories' operations the environment and the public continue to be protected.

The table on this slide provides the overall ratings for each safety and control area at the Chalk River Laboratories. As detailed in CNSC Staff's written submission CMD 18-H2, CNL has maintained a "satisfactory" rating across all SCAs and has improved from "below expectations" to "satisfactory" in management system SCA in 2013 and fitness for service SCA in 2017. CNSC Staff continue to monitor CNL's performance to verify that CNL continues to make adequate provision for the protection of workers, the public, and the environment.

The next series of slides discuss CNL's performance in each SCA, starting with the management system. Where the shutdown of NRU has significant impact on an SCA, we will also speak to that impact as we go through the SCAs.

The management system SCA covers the framework that establishes the processes and programs required to assure an organization achieves its safety objectives, continuously monitors its performance against
these objectives, and fosters a healthy safety culture. Prior to 2013, CNL was rated "below expectations" in the management system SCA. This rating was due to identified shortcomings with the CSA Standard N286-05 on management systems. Based on CNL activities to address these shortcomings, CNSC Staff raised CNL's performance rating to "satisfactory" in 2013.

More recently, CNL conducted a gap analysis against the requirements of N286-12, the updated version of the same standard. CNL's analysis found that the management system is compliant to the requirements of N286-12. The results of this analysis were confirmed by CNSC Staff.

CNSC Staff conclude that CNL's management system meets regulatory requirements.

Since 2016, CNL has been engaged in an update of their management system. This update is carried out as part of the delivery on the terms of the GoCo contracts. In carrying out these updates CNL has identified additional areas for improvement, such as further elimination of redundancies in documentation.

CNSC Staff verify on an ongoing basis that changes made to the CNL management system are made in accordance with the appropriate regulatory requirements,
particularly the CNL change management procedures.

CNSC Staff will also provide regulatory oversight to ensure the safety culture is maintained throughout the shutdown activities of NRU and ongoing site modernization activities.

Next, the human performance management safety and control area.

The human performance management SCA covers activities that enable effective human performance through the development and implementation of processes that ensure a sufficient number of licensee personnel are in all relevant job areas and have the necessary knowledge, skills, procedures, and tools in place to safely carry out their duties.

CNSC Staff have verified that CNL has established programs to address human performance management.

CNSC Staff verified that the CNL program meets the requirements of CNSC regulatory document RD-363, "Nuclear Security Officer Medical, Physical, and Psychological Fitness" and that CNL is currently engaged in implementing CNSC REGDOC2.2.4, "Managing Worker Fatigue".

CNSC Staff have verified that the CNL training program applies a systematic approach to training
for all operations personnel with jobs important to nuclear safety. This systematic approach is graded to the individual job and whether it is a direct or non-direct operating position.

Additionally, the CNL training program meets the requirements of CNSC regulatory document REGDOC-2.2.2, "Personnel Training".

CNL is required to ensure certain personnel working at NRU are certified by CNSC as stated in the current and draft proposed licences. CNSC Staff have verified that CNL continues to meet this regulatory requirement. With the shutdown of NRU, this requirement remains in place until CNL presents an assessment to demonstrate that certified personnel are no longer needed due to the shutdown state of NRU.

CNSC Staff note that CNL currently has enough certified staff in place to meet regulatory requirements. CNSC Staff do not anticipate any additional request for certification or request for renewal of certification of CNL staff given the shutdown plan for NRU.

CNSC Staff conclude that CNL's human performance management meets regulatory requirements.

Next, the operating performance SCA.

The operating performance SCA includes an
overall review of the conduct of licensed activities and the activities that enable effective performance. CNSC Staff have verified that Chalk River Laboratories and the facilities on site are operated safely and in compliance with CNSC regulatory requirements.

CNSC Staff have reviewed programs and documentation to support the activities carried out at the Chalk River Labs, including the conduct-of-operations documents, which describe Chalk River Laboratories' operations as a whole and the facility authorizations documents, which describe how individual facility operations are conducted, including elements such as operating limits and staffing requirements.

An important element to every licensee's operation are the programs in place to review operating experience, or OPEX, and apply corrective actions effectively. These are intended to ensure operations improve from both a safety and performance aspect when new information is gained by a licensee. Additionally, OPEX may be applied to reduce the significance and occurrence of unplanned events.

CNSC Staff verified that the processes under the OPEX program, including trending, internal and external communication of safety information and
benchmarking, were effective.

CNSC Staff conclude that CNL operating performance meets regulatory requirements.

CNSC Staff note that CNL's primary focus for operations was NRU due to the resources required to ensure continued safe operation. Many improvement initiatives related to the NRU were completed by CNL through the Integrated Implementation Plan, including the completion of Fukushima action items and the severe accident management program; however, in alignment with the decision made by the Government of Canada, CNL will permanently shut down NRU by April 1, 2018.

Illustrated on this slide is the NRU operational timeline. CNSC Staff note that CNL is currently scheduled to have NRU in defuelled, dewatered state by the end of October 2018.

As described in CNSC Staff CMD 18-H2, CNL has divided the shutdown activities into five phases. CNSC Staff assessed the CNL approach to the shutdown of NRU and confirmed that it is consistent with the approach applied by other Canadian reactors put into shutdown states. CNSC Staff note that once NRU is shut down, the overall risk profile of the Chalk River Laboratories decreases. The risk profile will decrease a second time when NRU is
defuelled and dewatered.

Aligned with the shutdown of NRU, the molybdenum-99 production facility will be permanently shut down in parallel. The shutdown of NRU represents a significant activity for the Chalk River Laboratories, however many other facilities are present at the site.

Over the proposed licence period, CNL plans to make changes to modernize the Chalk River Labs, including changes to improve and upgrade existing facilities, construct replacement facilities to modernize the site and support the CNL's science and technology mission, and consolidate existing activities into modernized facilities. CNSC Staff will continue to provide regulatory oversight of these activities.

Next, the safety analysis SCA.

The safety analysis SCA covers the maintenance of the safety analyses that supports the overall safety case. Safety analyses is a systematic evaluation of the potential hazards associated with the conduct of a proposed activity or facility and considers the effectiveness of preventative measures and strategies in reducing the effects of such hazards.

CNSC Staff reviewed CNL's safety analysis program and verified that safety analyses are carried out
in accordance with the requirements of CNSC REGDOC-2.4.1., "Deterministic Safety Analyses" and the criticality safety program meets the requirements of CNSC RD-327 "Nuclear Criticality Safety".

CNSC Staff conclude that CNL's safety analyses meets regulatory requirements.

CNL previously put a heavy focus on safety analysis to support the operation of NRU. With the shutdown of NRU, CNL will be required to revise the safety analysis to reflect the shutdown state of the reactor. CNSC Staff will continue to verify that CNL has suitable safety analysis in place for all nuclear facilities and activities at the Chalk River Laboratories.

Next, the physical design SCA.

The physical design SCA relates to activities that impact the ability of structures, systems, and components to meet and maintain their design basis given new information arising over time and taking changes in the external environment into account.

CNSC Staff verification of design at Chalk River Laboratories focused on facility design to ensure suitable design codes and standards are applied appropriately. When CNL has proposed new facility designs, CNSC Staff have conducted design reviews. CNSC Staff
conclude, based on these reviews, that CNL's physical design meets regulatory requirements.

Next, the fitness-for-service SCA.

The fitness-for-service SCA covers activities that impact the physical conditions of structures, systems, and components to ensure they remain effective over time. This area includes programs that verify all equipment is available to perform its intended design function when called upon to do so.

CNL was rated "below expectations" between 2012 and April 2017 due to identified shortcomings in the fitness-for-service SCA, such as the maintenance backlog and the implementation of reliability programs.

Fitness for service has been a focal point for CNL improvement activities at Chalk River Labs. As directed by the Commission, CNSC Staff presented a series of updates on fitness for service to the Commission between June 2016 and April 2017, when CNL achieved a "satisfactory" rating.

CNSC Staff rated CNL "satisfactory" in 2017 based on CNL's closure of gaps, effective implementation of new programs, closure of Fukushima action items, site-wide infrastructure improvements, and execution of the integrated implementation plan for NRU.
CNSC Staff have verified that CNL's fitness for service includes adequate programs for maintenance, equipment reliability and inspections.

CNSC Staff conclude that CNL's fitness for service meets regulatory requirements.

Since 2012, significant CNL resources were dedicated to ensuring continued fitness for service of NRU. As NRU activities progress, CNL activities related to fitness for service will shift to focus on decommissioning work and site modernization.

These activities will have an overall positive effect on fitness for service of the Chalk River Laboratories. For example, CNL waste and decommissioning work also addresses in some cases structural integrity of Legacy buildings and structures, which improves overall site fitness for service.

CNSC Staff will continue to provide regulatory oversight of CNL activities related to fitness for service.

Next, the radiation protection SCA.

The radiation protection SCA covers the implementation of a radiation protection program in accordance with the Radiation Protection Regulations. This program must ensure that contamination levels and radiation
doses received by individuals are monitored, controlled, and maintained As Low As Reasonably Achievable, or ALARA.

CNL has implemented and maintained a radiation protection program to control the radiological hazards present in its facilities and to ascertain doses for each person who performs duties in connection with their licensed activities. During the licence period no worker at the Chalk River Laboratories was exposed to a dose exceeding the regulatory dose limits. Similarly, no member of the public received a dose that approached or exceeded the 1-millisievert annual regulatory dose limit for a member of the public.

This graph shows the average and maximum individual effective does for workers at Chalk River Laboratories. Throughout the licence period the maximum individual dose has been to a worker at NRU. Doses to workers have been maintained consistently below the regulatory dose limits throughout the licence period. From this CNSC Staff conclude that CNL continues to meet the requirements of the Radiation Protection Regulations and effectively controlled doses to workers and the public.

CNSC Staff confirmed that radiation doses to the public are monitored, controlled, and maintained ALARA. The doses to the public are routinely below 10
percent of regulatory dose limits.

The main contributors to the dose to the public are NRU and the facilities associated with radioisotope production. More than 95 percent of doses to the public are associated with the operation of these facilities. With the shutdown of NRU, CNSC Staff expect further decreases to the doses to the public.

Next, the conventional health and safety and control area.

The conventional health and safety SCA covers the implementation of a program to manage workplace safety hazards and to protect personnel and equipment. CNSC Staff verified that CNL's conventional health and safety program meets the requirements of Canada Labour Code Part II, "Occupational Health and Safety", and CNSC Staff also confirmed that CNL achieves a high degree of personnel safety through good work practices and safe working conditions.

CNSC Staff conclude that CNL's conventional health and safety meets regulatory requirements.

Recordable lost-time injuries are injuries that take place at work and result in workers being unable to return to work to carry out their duties for a period of
time. Lost-time injuries are a commonly used metric for presenting injury-rate data. In reviewing the recordable lost-time injuries, CNSC Staff considered the severity of these injuries, that is the total days lost, and the frequency as they relate to the size of the workforce. Since 2012, the frequency and severity rates of recordable lost-time injuries at Chalk River Laboratories demonstrate a positive downward trend.

CNSC Staff continue to verify CNL's safety practices during compliance inspections and site walk-downs.

CNSC Staff will increase focus on safety practices as construction and decommissioning activities on site increase.

Next, the environmental protection safety and control area.

The environmental protection SCA covers programs that identify, control, and monitor all releases of nuclear and hazardous substances, and the effects on the environment from facilities or as a result of the licensed activities. CNSC Staff have verified that CNL continues to implement and maintain an environmental protection program that meets regulatory requirements.

Airborne and liquid radiological emissions
remain effectively controlled and well below regulatory limits for radioactive and non-radioactive releases.

From its review, CNSC Staff confirmed that CNL's environmental protection program meets the requirements of CNSC REGDOC-2.9.1, "Environmental Principles, Assessments and Protection Measures," CSA Standard N288.4, "Environmental monitoring programs at Class I nuclear facilities and uranium mines and mills," CSA N288.5, "Effluent monitoring programs at Class I nuclear facilities and uranium mines and mills", and CSA N288.6, "Environmental risk assessment at Class I nuclear facilities and uranium mines and mills".

CNSC Staff conclude that CNL's environmental protection meets regulatory requirements.

This figure indicates the low level of airborne emissions from Chalk River Laboratories. The airborne emissions remain far below the dose constraint established by the Commission. CNSC Staff note that in 2014 there was an increase in iodine-131 and noble gas releases due to an increased level of molybdenum-99 production that year.

This figure indicates the low level of liquid effluent releases from the Chalk River Laboratories. Please note that this figure uses a logarithmic scale. The
liquid releases remain far below the dose constraint established by the Commission.

Gross alpha and gross beta releases are typically identified at facilities associated with decontamination activities at site. In 2014 there was an increase in these emissions due to an increase in the schedule for decontamination of the flasks from the molybdenum-99 production facility. While there was an increase in releases, we note that the releases are still a small fraction, less than 1 percent, of the limits.

Over the proposed licence period, CNL has committed to continue to enhance its existing environmental protection programs through the implementation of CSA 288.7, Groundwater Protection Programs at Class I Nuclear Facilities and Uranium Mines and Mills, and CSA N288.8, Establishing and Implementing Action Levels to Control Releases to the Environment from Nuclear Facilities.

In CNSC Staff CMD 18-H2, Staff committed to providing an update to the Commission on the results of the assessment of radiological risk to chimney swifts roosting in the Molybdenum-99 production facility stack.

CNSC Staff have since completed the review of the assessment and confirm CNL's results.

The CNSC Independent Environmental
Monitoring Program, or IEMP, was implemented to verify that public health and the environment is not adversely affected by releases to the environment around CNSC regulated facilities. The IEMP was implemented to complement ongoing CNSC verification activities.

The previous sampling campaign for Chalk River Laboratories was carried out in 2015, and the next campaign is scheduled for 2019. The detailed results are available on the CNSC web site and consistent with the results submitted by CNL.

This supports the CNSC Staff conclusion that CNL's environmental protection program protects the health and safety of people and the environment.

Next, the emergency management and fire protection SCA.

The emergency management and fire protection SCA covers emergency plans and emergency preparedness programs that exist for emergencies and non-routine conditions. CNSC Staff have verified that CNL has capabilities in place to respond to credible nuclear and conventional emergencies, and CNSC Staff conclude that CNL continues to meet its regulatory requirements regarding emergency management program.

Since 2012, CNL continues to make
improvements related to emergencies -- excuse me, related to fulfilling its emergency management and fire protection requirements. CNL has completed the improvements and significant activities outlined on this slide.

CNSC Staff verified that CNL has been an active, cooperative participant working with provincial authorities in both Ontario and Quebec as well as municipal and regional authorities to ensure suitable emergency plans are developed and in place.

CNL has met the requirements related to the pre-distribution of potassium iodide tablets, or KI pills, to all residents, businesses and institutions within the primary zone of the Chalk River laboratories. CNL has also pre-stocked sufficient potassium iodide tablets out to the secondary zone.

With the shutdown of NRU, the risk profile of the Chalk River Laboratories decreases significantly. CNL must be able to respond to any emergency at the site at all times. However, once NRU is shut down, defueled and dewatered, the credible off site scenarios decrease significantly.

CNL will update response arrangements and their response programs to reflect the changing nature of the Chalk River Laboratories.
CNSC will continue to monitor CNL's emergency response arrangements to verify continued compliance with the regulatory requirements.

Next, the waste and decommissioning SCA.

The waste management SCA covers internal waste-related programs that form part of the facility's operations up to the point where waste is removed from the facility to a separate waste management facility. This area also covers the planning for decommissioning.


CNSC Staff confirm that waste and decommissioning programs are mature and well established. CNL waste management program manages the generation, handling, transportation and storage of nuclear wastes, including waste minimization, during all phases of its operation.

CNL has also established an integrated waste management strategy.

CNSC Staff have verified that since 2012,
CNL has improved waste management practices at CRL for activities including waste characterization, segregation, treatment and retrieval, waste management record-keeping, recycling of waste, radiological surveys of waste.

CNSC Staff conclude that CNL's wastes and decommission meets regulatory requirements.

The Nuclear Legacy Liabilities Program, or NLLP, was established to safely and cost effectively reduce the nuclear legacy liabilities and associated risks based on sound decommissioned waste management and environmental principles in the best interests of Canadians.

The NLLP was established and administered by Natural Resources Canada until 2015 when responsibilities for management of the legacy liabilities was transferred to CNL through the terms of the GoCo contract. CNL now manages the nuclear legacy liabilities on the Chalk River Lab site through CNL's operational activities, including the waste and decommissioning programs.

CNSC Staff have verified that CNL has implemented and established a suitable Comprehensive Preliminary Decommissioning Plan, or CPDP, with appropriate cost estimates for decommissioning, and that the decommissioning program meets all regulatory requirements.
related to decommissioning planning and decommissioning of facilities.

CNL is required to update the CPDP at a minimum once every five years. The current version of the CPDP was submitted to CNSC Staff in 2014. Due to anticipate changes in the decommissioning activities, CNL is currently updating the CPDP.

CNSC Staff expect updates of the CPDP more frequently than the minimum once every five years due to the changes ongoing at the Chalk River Laboratories. CNSC Staff continue to review the CPDP when it is revised to ensure continued suitability of the plan.

Next, the security SCA.

The security SCA covers programs required to implement and support security requirements stipulated in the regulations, the licence, orders or expectations for the facility or activity. CNSC Staff verified that CNL's security program meets the requirements of the Nuclear Security Regulations.

Additionally, Staff have confirmed that the CNL program currently meets the requirements of CNSC Regulatory Documents RD-321, Criteria for Physical Protection Systems and Devices at High Security Sites, RD361, Criteria for Explosive Substance Detection, X-Ray

CNSC Staff conclude that CNL security meets regulatory requirements.

Next, the safeguards SCA.

The safeguards and non-proliferation SCA covers programs and activities required for the successful implementation of the obligations arising from the Government of Canada and the IAEA safeguards agreements as well as other measures from the Treaty on the Non-Proliferation of Nuclear Weapons, or NPT, and bilateral cooperation agreements.

CNSC Staff have reviewed CNL's safeguards program and confirm it meets CNSC regulatory requirements to meet Canada's international safeguards obligations and commitments.

CNSC Staff confirm that CNL continues to provide access and assistance to the IAEA inspectors when requested.

CNL's safeguards program is compliant to CNSC REGDOC RD-336, Accounting and Reporting of Nuclear
Material, and CNL has implemented reporting using the CNSC's nuclear materials accountancy reporting, or NMAR, portal.

The scope of the non-proliferation program for CNL is limited to the tracking and reporting of foreign obligations and origins of nuclear material. This tracking and reporting assists the CNSC in the implementation of Canada's bilateral nuclear cooperation agreements with other countries.

The import and export of controlled nuclear substances, equipment and information identified in the nuclear non-proliferation import and export control regulations requires a separate authorization from CNSC consistent with sub-section 3(2) of the General Nuclear Safety and Control Regulations.

CNSC Staff conclude that CNL's safeguards and non-proliferation meet regulatory requirements.

Next, the packaging and transport SCA.

The packaging and transport SCA covers programs for the safe packing and -- excuse me, packaging and transport of nuclear substances to and from the licensed facility.

CNSC Staff confirm that CNL has implemented a packaging and transport program that meets
the requirements of the Packaging and Transport of Nuclear Substances Regulations, 2015, and the Transportation of Dangerous Goods Regulations.

CNSC Staff conclude CNL's packaging and transport meets regulatory requirements.

In 2010, the governments of Canada and the United States of America committed to repatriate high enriched uranium, or HEU, to the United States as part of a broad international effort to consolidated HEU inventories in fewer locations around the world.

The commitment established -- excuse me, eliminates a nuclear liability for future generations of Canadians and improves safety by consolidated HEU inventories worldwide. CNL is responsible to contribute to fulfilling Canada's commitment on repatriation.

The CNSC has assigned a multi-disciplinary team for the oversight of the repatriation activities. This team includes security specialists, transport and packaging specialists and on-site inspectors.

The shipments of HEU are subject to stringent certification, security -- transport security plan and safety analysis requirements. These stringent requirements were recently verified by CNSC inspectors and found to be in compliance.
There have been no incidents related to these shipments as CNL contributes to Canada fulfilling its commitment to repatriate HEU.

Next, an overview of other matters of regulatory interest as presented in CNSC Staff CMD 18-H2.

Prior to this hearing, CNSC Staff posted a Notice of Hearing on the CNSC web site. The same Notice was sent out to subscribers and advertised in digital and print media.

CNSC Staff provided information on the CNSC licensing process and Chalk River Laboratories relicensing at outreach sessions in Deep River and Sheenboro in April of 2017. Additionally, CNSC staff hosted webinars to provide information on the public -- excuse me, information to the public on the role of CNSC and the next steps of the relicensing process.

CNSC Staff note that CNL continues to host meetings of the Environmental Stewardship Council as recommended by the Commission.

Next, we provide information on the engagement with indigenous groups.

The CNSC is committed to regular, formalized and structured engagement with all indigenous communities. CNSC Staff identified First Nations and Métis
groups who may have an interest in the proposed licence decision.

Those five groups are the Algonquins of Ontario, the Algonquins of Quebec, Kitigan Zibi Anishinabeg, the Métis Nation of Ontario, and the Union of Ontario Indians.

CNSC Staff sent letters of notification to the identified groups in July 2017. These letters provided information regarding the proposed licence renewal decision, the availability of participant funding, and details on how to participate in process.

The letters were followed up with phone calls to ensure reception of the letters and to answer any further questions about the regulatory process and how to get involved.

Additionally, CNSC staff note that CNL maintains relationships with indigenous groups and continues to engage with the communities through the Environmental Stewardship Council.

Next, we provide information on the CNSC participant funding program.

The participant funding program, or PFP, has been implemented to assist members of the public, indigenous groups and other stakeholders in providing value
added information to the Commission through informed and topic-specific interventions.

The CNSC made up to $75,000 available through the PFP and up to $72,199 was awarded by the Independent Funding Review Committee to the six recipients listed on this slide. These recipients will be presenting oral interventions to the Commission over the next few days.

Next we will be providing information on the interventions received.

The CNSC received 88 interventions for this hearing, with 54 requests for oral intervention. The themes from these interventions include the proposed length of the licence, the format of the proposed licence and the draft LCH, references to and use of the Canadian Standards Association Standards, governance of CNL under the GoCo model, management of radioactive waste and decommissioning activities at Chalk River Laboratories, and emergency management and response.

Information on these topics have been presented in this presentation as well as CNSC Staff's supplementary CMD 18-H2.A.

Next we provide information on cost recovery, nuclear liability insurance, financial guarantees
and the public information program.

CNSC Staff verified that CNL continues to comply with the cost recovery fees regulations. Natural Resources Canada has confirmed that CNL maintains adequate nuclear liability insurance under the *Nuclear Liability and Compensation Act*, which came into force on January 1, 2017, and is now administered by Natural Resources Canada.

CNSC Staff have confirmed CNL has a suitable financial guarantee in place and maintains cost estimates for decommissioning of the Chalk River Laboratories.

CNSC Staff confirmed that CNL's public information and disclosure program meets the requirements of CNSC RD/GD-99.3, Public Information and Disclosure.

I now pass the presentation back to Ms Tadros to present CNSC Staff's conclusions and recommendations.

**MS TADROS:** Thank you.

To summarize, the pending shutdown of NRU will result in a reduction of the actual and potential impacts from operations of the Chalk River Laboratories. As noted in CNSC Staff's presentation of the safety and control areas, the shutdown of NRU will significantly reduce emissions to air and water, virtually eliminate
doses to the public and eliminate the possibility of off-site consequences from credible emergencies.

The NRU reactor is the only facility requiring certified personnel. Its closure will eliminate the need for certified staff.

Operations and maintenance activities at the Chalk River Laboratories have been focused on the continued operation of NRU.

With the closure of NRU, the operations and maintenance requirements are concentrated on the remaining facilities, which represent significantly less risk.

The safety analysis for NRU is highly complex and has required significant effort to adequately maintain and assess. The remaining safety analyses are far less complex, with scopes that represent a significant reduction of risk when compared to NRU.

So beyond the pending NRU shutdown, there are no other changes to the currently authorized licensed activities at the Chalk River Laboratories. CNL continues to maintain strong and effective programs that are being improved on an ongoing basis to meet best practices, address emerging issues and meet additional regulatory requirements.
The proposed 10-year licence term ensures regulatory certainty of the licensed activities and allows CNL to continue its safe operation while ensuring transparency of operations and public engagement.

CNSC Staff will continue regulatory oversight, including inspections, reviews of reported information, and reviews of any applications submitted.

It is important to note that any major changes proposed by CNL at any time will be brought back to the Commission for decision.

With respect to paragraphs 24(4)(a) and (b) of the Nuclear Safety and Control Act, CNSC Staff conclude that CNL is qualified to carry on the activities authorized by the licence and will, in carrying out these activities, make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.

Therefore, CNSC Staff recommend that the Commission accept CNSC Staff's conclusions and recommendations presented in CNSC Staff's CMD 18-H2 to authorize CNL to operate the Chalk River Laboratories to March 31, 2028 pursuant to section 24(2) of the Nuclear
Thank you for your attention. We are available to take any questions you may have.

**THE PRESIDENT:** Thank you.

I think this is a good time to take a break for about 15 minutes, which should get us to -- what's the time -- 3:35, I believe.

--- Upon recessing at 3:20 p.m. /
Suspension à 15 h 20
--- Upon resuming at 3:40 p.m. /
Reprise à 15 h 40

**MS McGEE:** Good afternoon. We will now move to the interventions.

Before we start, I would like to remind intervenors appearing before the Commission today that we have allocated 10 minutes for each oral presentation, and I would appreciate your assistance in helping us to maintain the schedule.

Your more detailed written submission has already been carefully read and will be duly considered.

There will be time for questions from the Commission after each presentation, and no time limit has
been ascribed for the question period after your oral presentation.

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

Thank you very much for your assistance.

THE PRESIDENT: Okay. Thank you.

The first presentation is by the Algonquins of Ontario, as outlined in CMD 18-H2.51 and CMD 18-H2.51A. I understand that Ms Clouthier will take the floor. Over to you.

CMD 18-H2.51/H2.51A

Oral presentation by Algonquins of Ontario

MS CLOUTHIER: Thank you and welcome to unceded Algonquin territory.

My name is Lynn Clouthier. I am here as an elected representative of the Algonquins of Ontario.

Our territory is a territory over which the Algonquins are the sole recognized holders of existing aboriginal rights and title.

We are comprised of 10 Algonquin
communities.

The Algonquins of Ontario have signed an agreement in principle with the governments of Canada and Ontario. The signing of the AIP signalled the beginning of a new relationship between the AOO and the Crown, one in which the mistakes of the past must be supplanted by a new type of mutual respect and cooperation.

"The Earth is our mother, we cannot own her", so said Grandfather William Commanda. For millennia, Algonquins lived with that truth and afforded her due respect. We assumed our responsibility to protect our place in creation and thrived. Indeed, our very identity and culture is the result of that relationship.

The last four centuries have brought profound changes to our territory. We watched as Mother Earth was exploited and degraded within our territory, and all without regard or agreement from Algonquins.

As our mother has struggle to adapt, so have we. Our culture and identity have been nearly extinguished. Change continues. Now we are joined by many others in our imperative to protect and respect Mother Earth for future generations. This is the purpose of our presence here today.

Chalk River Laboratories is situated on
unceded AOO settlement lands, over which the AOO will exercise treaty rights once treaty negotiations have been completed.

The decision to establish and operate CRL was made without any consultation or accommodation with the Algonquin people, and since 1944, Algonquins have been prohibited from exercising their aboriginal rights on those 3,700 hectares. Most serious has been the environmental degradation and potential of further harm of the site and surrounding area, including the water.

It is acknowledged by the AOO that Chalk River Laboratories has been an anchor in the field of research and innovation, particularly the contributions in the application of nuclear technology in medicine, science, power generation, and nuclear waste management. This body of research has been of universal benefit.

Laterally, through its cultural resource management program, CRL has also made a significant contribution to our current understanding of Algonquin settlement patterns, land use, and material culture through the ages. Land use and cultural data, as well as extensive archeological assessments of the site, confirm that Algonquin people have a long-standing record of use and occupation at the site. The CRL site was an important
harvesting area in the past. The areas around CRL continue to be actively used by Algonquins today, and will be used as such well into the future. The cultural values confirmed there have been significantly affected and degraded by the original construction of the CRL facilities, as well as the attendant town of Deep River.

Future construction and reclamation work at CRL has the potential to further disturb and damage Algonquin heritage resources. Algonquin heritage resources represent the physical and spiritual manifestation of ancestral ways of life, traditional values, and knowledge of the Algonquin people. It is critically important that these resources be protected to preserve Algonquin history and traditions, and to promote awareness and education about the Algonquin people for future generations.

The AOO strongly disagree with Canadian Nuclear Safety Commission staff who believe the licence renewal for CRL does not raise the duty to consult. Our reasons are, firstly, there was a complete absence of consultation or accommodation when the site was initially proposed and developed in 1944. The construction and reclamation projects proposed at CRL over the 10-year licence period are extensive. The reality is that these projects, decommissioning of the NRU reactor, and cleanup
of legacy waste have the potential to impact the environment and health of Algonquin people and others for generations. As an agent of the Crown, the CNSC is responsible for ensuring the duty to consult is properly enacted.

The AOO's written submission articulates 40 key accommodation measures and information requests. Our review of CNL's licence application focused on the interaction between Chalk River Laboratories and the constitutionally-protected rights and interests of the Algonquins of Ontario.

Our primary concern was with the lack of consultation and consent from Algonquin communities when CRL was originally constructed. However, we also share concerns about the potential impacts of the licence application to the lands, the water, and the health of all life in the Ottawa River watershed.

We believe that the best way forward is to put in place a formal long-term relationship agreement as a condition of licence renewal. We need appropriate accommodation measures, as well as agreed-upon protocols for accessible information, transparency, communication, participation, oversight, accountability, and collaborative decision-making, with the aim of inclusion. We have a
collective responsibility.

The following slides highlight four important areas of accommodation that are critically important to the AOO as part of this consultation and accommodation process.

The AOO must be directly involved in and be provided capacity support to participate in compliance monitoring.

CNL and AECL should negotiate a long-term archeological agreement with the AOO, which will provide education, training and research.

In addition, an indigenous knowledge, land use and occupancy study must be conducted near CRL to develop a broader understanding of Algonquin values affected by the laboratories.

We strongly promote the creation of a nuclear environment review board, consisting of representatives of the AOO, CNSC and CNL, to promote the effective participation of the Algonquins of Ontario within the environmental management and monitoring programs of CRL. The board would serve to provide guidance and oversight, and would require sufficient resources to allow the board to dedicate the time required to fulfil its mandate.
The AOO request the establishment of formal communication protocols as we establish a more robust relationship with CNL and AECL to ensure that information is accessible in a transparent and timely manner.

Prime Minister Trudeau, in his 2016 mandate letters, wrote:

"It is time for a renewed, nation-to-nation relationship with First Nations peoples: one that is based on the understanding that the constitutionally-guaranteed rights of First Nations are a sacred obligation that we carry forward."

Based upon this principle, decision-making regarding the CRL site and the breadth of CNL programs must be made collaboratively with the AOO. It is fundamental to fostering reconciliation and restoring resiliency to our people.

The AOO acknowledge the valuable work occurring at CRL. We acknowledge that many Algonquins, since 1944, have found employment there, but that is not enough. The 40 recommendations in our CRL licence application review cover the issues of the environment,
archeology and heritage, human health, safety and facility issues, and consultation and accommodation. We respectfully urge the Commission to impose a condition upon the licence for CRL that CNL will make reasonable efforts to establish a formal consultation and accommodation arrangement with the AOO in the form of a long-term relationship agreement.

Let's direct the changes for the future together. Algonquins and others have a right to participate in making absolute best efforts and decisions to protect our Mother Earth for all that live on her.

Meegwetch. Our delegation will welcome questions.

THE PRESIDENT: Thank you.

Questions? Who wants to start?

Member Soliman.

MEMBER SOLIMAN: Thank you very much for your presentation.

My question is to CNL. There are five concerns given in slide nine. I would like you to address the first concern about the current use of land and the resources: hunting, fishing, gathering, and ceremony.

MR. COX: David Cox, for the record.

Before I turn it over to Mr. Pat Quinn for
additional comment around our engagement with indigenous communities, I'd just like to note a few opening points.

CNL is committed to ongoing engagement with indigenous communities. We have an active engagement already under way with over 15 local indigenous communities, including AOO and members of the AOO.

CNL has also consistently exceeded the employment and social development requirements for employment in the aboriginal community. We're in the range of 7 percent aboriginal community employment at the Chalk River Laboratories.

I'll ask Mr. Quinn to provide us with some information about the long-term engagement agreement that we are currently discussing with Algonquins in relation to the impacts that were noted on slide nine.

**MR. QUINN:** Good afternoon. For the record, my name is Pat Quinn. I am Director of Corporate Communications for Canadian Nuclear Laboratories.

With respect to the items on slide nine, I see an opportunity for Canadian Nuclear Laboratories to continue on discussions with the Algonquins of Ontario, and making arrangements for a long-term relationship agreement so that we are able to explore these items.

With respect to our engagement activities
to date, CNL has met on several occasions with the Algonquins of Ontario to discuss a variety of our activities, and we agree that there are opportunities to continue to have those conversations.

If I were to take a look at any particular item here, for example, the elements that are related to their cultural activities, we've been very open and transparent with the sharing of our archeological findings from our cultural resources program, and would continue to do so, but I think that it's desired by both parties to have a more formal arrangement so that we're able to have common points and explore those. That would be the roadmap for our continuing relationship, so we could address some of these concerns through that channel.

**MEMBER SOLIMAN:** How about number one? I'm asking about hunting, fishing, gathering and ceremony. How do you help in that? What can you do in order to resolve this concern?

**MR. COX:** David Cox, for the record.

With respect to current use of lands and resources, including hunting, fishing, gathering, et cetera, there are elements that we already support with AOO in terms of harvesting of specific trees, for example, where there's been engagement and cooperation recently.
In terms of hunting and fishing, currently Chalk River is a controlled site, a secure site, and so those activities are currently not available on our property.

That's how we would see number one. I must emphasize that we remain in full compliance with the REGDOC associated with indigenous engagement and are actively, as Mr. Quinn said, engaged in discussions about a long-term communications agreement.

**THE PRESIDENT:** Maybe we can hear from --

**MEMBER SOLIMAN:** Can you address it, please, if you are satisfied with this answer?

**MS CLOUTHIER:** Yes. We acknowledge that we have had communication with CNL. I think the last point, when it was said that they're in compliance with the regulations, consultation and accommodation goes beyond compliance, it's an actual relationship that is formed. We have had talks, we have had information sessions with CNL, but we want more. We want true consultation and accommodation. It's not an easy thing to do. It takes a long time to develop a proper relationship under that term "consultation", and the two parties know it when they achieve it. We have just begun.

We're not complaining about the amount of
information-sharing or the relationship, in fact, it looks very positive, but if we're looking at just complying with regulations, is there anything that's going to sustain this relationship?

First nations people have learned one really important thing, which is don't trust anybody in authority, right, so if we want this to work we have to have a formal long-term arrangement, and it has been agreed that we can go that way, we're simply getting this on the record.

**THE PRESIDENT:** Staff, I understand you've been doing some consultations also. Maybe you can share where you are on that front.

**MS TADROS:** Thank you.

Haidy Tadros, for the record.

That is accurate, sir, we've come before you on many different files indicating a commitment to more formalized, structured engagement activities.

I'll ask Ms Clare Cattrysse to maybe give you an update on where we're at with the Algonquins of Ontario with regard to some of the concerns and relationship-building that they're looking for.

**MS CATTRYSE:** Hello. I'm Clare Cattrysse. I'm the Director of the Policy Aboriginal
International Relations Division at the CNSC, for the record.

I do just want to say that, really, we at the CNSC, it's very, very important for us to maintain and grow our relationships with indigenous groups. We've really appreciated having the opportunity to meet with the Algonquins of Ontario back in both May and July where we had lengthy discussions about the issues here, that are at the table, with respect to activities taking place at the site.

What we would like to do, and we have expressed this, is there were concerns raised about traditional knowledge, not understanding some of the land use activities adjacent and around the site, and the CNSC has definitely said that we would be available to accept applications, for example, under our participant funding program, to explore looking at some land use studies, also to see what usage is taking place. Maybe that could inform some of the monitoring that we do at the CNSC, because we have an independent environmental monitoring program, and we have expressed this.

We have followed up with the AOO, and we are hoping and we've been told we should be getting an application coming hopefully at the end of this month so
that we can have further discussions about this.

As mentioned by Ms Tadros too, we're also starting -- we are now very much involved with the NSDF environmental impact assessment that is going on, so we are consulting on that with the AOO, but we also want to explore looking into setting up indigenous engagement forums around nuclear facilities in Canada.

So this is a new initiative and we’re really excited about it and we’re getting a lot of uptake around facilities. So our goal would be to see -- especially I believe there was one of the -- to set up like a nuclear -- excuse me for a moment, what the slide was.

A Nuclear Environmental Review Board.

It would be more along the lines of -- we know that there’s a lot of questions and concerns about activities taking place at the site. So we see an opportunity here to work with the Algonquin and other indigenous groups that may have an interest to set up different forums around the facilities, to talk about on a regular basis what’s happening at the site.

We can have CNSC there and give updates and also hear what the concerns and issues are. And we can also invite CNL to those meetings for parts of the meeting.

It’s really basically we’re going to leave
it up to the communities how they want to do these forums. Thank you.

**MEMBER SEELEY:** Perhaps a question on the environmental monitoring side, just moving on to Slide 11.

So my question would be: There is a fairly extensive off-site environmental monitoring program I believe already in place for CNL. Have the Algonquins had an opportunity to participate or provide additional information to supplement this off-site environmental program?

Maybe I will direct that to CNL first.

**MR. COX:** David Cox, for the record.

I will ask George Dolinar to comment on the environmental monitoring engagement with the Aboriginal community.

**MR. DOLINAR:** George Dolinar, for the record, Director of Radiation Protection, Environmental Protection Dosimetry at CNL.

We operate an extensive environmental monitoring program. This looks at various media and foodstuffs off-site, as well as various media on-site. We provide these reports typically through our Environmental Stewardship Council to members of the public and any of the participants in the ESC.
We also provide reports of our environmental monitoring program, our annual reports, to members of the public who request it through our Public Affairs group.

I guess one item of note here in terms of participation -- although I wouldn’t put this as direct participation of the Algonquins of Ontario -- we did in 2013 conduct a lifestyle, food consumption survey as part of our efforts to make sure that our assumptions for CSA Standard N288.1 were correct.

This involved going out to many, many homes in the vicinity of the Chalk River Labs, both upstream and downstream of those that were potentially affected by our emissions. We looked at food consumption habits.

And as you would expect, in the area that we live we have a lot of people who hunt and fish and gather mushrooms and berries, and so on. One of the questions on the survey was, we were asking people to identify if they were from an indigenous community.

Some people did self-identify as being members of different indigenous communities. So we have that information and we factor that into our modelling.

MEMBER SEELEY: I guess it would be more
specific around use of traditional ecological knowledge in those off-site studies. Have they had an opportunity to have a dialogue around that and including that information in your off-site studies?

Either party, Algonquins or CNL.

I heard from CNL. Why don’t I hear from Algonquins? Thank you.

MS CLOUTHIER: Okay. Well, not to my knowledge.

What we are thinking of with participating in monitoring, if you bring in a group three, four times a year, the group may change. You have given them some information. Away they go. Next time somebody else comes back.

What is not happening is a deep understanding of what it is that is being measured, monitored; what it means.

It has to be a more formal exercise whereby the people that don’t work for CNL are learning as well.

It’s all well and good. You guys, the people at CNL have a particular skillset, a particular set of knowledge. But it is plunked down straight in the middle of our territory. And we are just supposed to
accept what’s happening.

   There has to be some inclusion. That’s what consultation is about. It’s about inclusion. Come with us, see what we’re doing here, see why you can be assured.

   And if that were done in a comprehensive way, communication was done in a comprehensive way, not only the Algonquins of Ontario but the people in the whole watershed would feel much more comfortable about the work that’s happening.

   So it’s a matter of deepening the relationship. It’s a matter of making it formal so that it’s not three times a year, it’s not a one-off, that it’s meaningful.

   It’s a new way of going.

   THE PRESIDENT: Thank you.

   Dr. McEwan?

   MEMBER McEWAN: Can I just follow up on that because I think it’s an important idea.

   For you to be able to do that is going to require some capacity building? Or do you already have that capacity within your community to be able to do that?

   MS CLOUTHIER: Very good point. We do not have that capacity.
But this is nuclear science. Right? You have to explain it to some other people.

Yes, we would have to acquire the capacity, and that should be part of the responsibility of the industry; that the people from whom they’re getting a social licence are informed, that they understand what it is that is happening.

MEMBER McEWAN: So it seems to me there are sort of four or five elements to this, I think.

MS CLOUTHIER: Yes.

MEMBER McEWAN: One is obviously environmental.

There is the transportation. You made reference to it two or three times.

I should say thank you for your submission. I enjoyed reading it.

MS CLOUTHIER: Thank you.

MEMBER McEWAN: You made reference to transportation several times. You made reference to archeology and historical knowledge several times.

And then there is the fact that the operations are there and are continuing, planned to continue to be there.

So what is needed then to build that
capacity within that framework to enable you to build what I think I’m understanding you are saying by a long-term sort of partnership?

**MS CLOUTHIER:** Well, I am not a nuclear scientist so I don’t know what it’s going to take.

But I do know that we represent people that have rights. So I’m coming at it from that aspect. We know that this industry isn’t going anywhere. We know that the best way forward is to do the best job we can to have it safe and to have us included.

So what it takes would be also -- discovering what it takes would also be a function of the consultation of getting together with the industry and talking about where you want to go as a group, the people that would come and consult, the Algonquins that would be there to talk it out. Okay, what can you tell us? What can we learn? What can we know? What is our relationship?

And through relationship you build trust. Through trust you are able to plant more seeds.

It’s a very holistic way.

I don’t know if I’ve answered your question. You look doubtful.

**MEMBER McEWAN:** No.

--- Laughter / Rires
MEMBER McEWAN: I’m thinking the question really isn’t one of purely nuclear science, is it?

MS CLOUTHIER: No.

MEMBER McEWAN: It’s a much broader one. It relates to construction. It’s related to environment. It is all of those elements that you’ve put in.

So the nuclear science part of it is only a small part of it. There’s an engineering component of it.

But a lot of it is actually related to this interaction with land and interaction with your history.

How do you build that capacity? How are you helped to build that capacity?

You must have some ideas on what that might look like.

MS CLOUTHIER: Yes. One thing, we are rebuilding a nation. So we are doing this without -- you know, it’s just coming out of the air.

So what we are hoping is that -- what we want is for our young people to see what the future holds, to see -- something that happens with many people who are disadvantaged is that they don’t have any hope. They don’t see where they could go in the future.
So if we open up this door and they see look, there are positions here. This is an exciting place. This is an exciting industry. If you were to do this -- I don’t know, take this summer job on and fund education in certain directions and so on, we would hope to build -- we would hope to build the hope in our young people and to let them see the future.

I mean, that is our main aim. We are not going to survive if our young people don’t have some way to be that is different than what we were.

MEMBER McEWAN: Thank you. That I think is much clearer.

I also saw perhaps little snippets of it again in your submission. The archaeology summer school is a good example of that; just building that broader knowledge base.

MS CLOUTHIER: Yes.

THE PRESIDENT: I have a question because I thought on the archaeological, on the site, the CNL and the Algonquin really co-operated extensively.

I don’t understand why it wasn’t then transformed into something more formal and ongoing, which I think that’s what everybody is talking about, is beginning of trying to identify solutions and opportunities.
MS CLOUTHIER: There is still quite a bit more to do. It’s a very historically rich place. A lot of the artifacts and the various sites and so on were found incidentally. And, you know, the artifacts would be put in the Museum of History and that would have happened 70 years ago.

So there is lots more work to do.

We have with our archaeologist Ken Swayze, who is working -- when I say our, he works for us but he also works for CNL.

He was instrumental in getting Algonquin people on the site and doing part of the digs. But it’s a very small amount of the potential that’s there. And it is a really good start.

But of course we want that to go further.

And it’s all well and good to find a few pot shards here and something else here and something here, but when you put it all together what’s the whole story? And we don’t have the whole story any more simply because of the 400 years of change that has happened to us, where we lost our agency, we lost our stories, we lost darn near everything.

So we’re trying to rebuild it again. So this archaeology of course is important and we are grateful
for that opportunity. But we need more.

**THE PRESIDENT:** I don’t want to misrepresent anybody but I think the three parties are in violent agreement to set up what did you call it, a nuclear -- forget about the environment, just a nuclear indigenous board of some sort to talk about all aspects of the question.

If everybody agrees, then why don’t you make it happen?

**MS CLOUTHIER:** Well, we want assurances because do we trust? Not individually trust but we want this formalized. We want it to happen. And we want it to happen because it has to happen, not because it would be nice if it were going to happen.

So that’s why we have asked for the formal requirement and as a condition of the licence, that we be included.

**THE PRESIDENT:** Well, as much as we like to help you, there is some constraints that we cannot do. We cannot undo the wrongs of the past.

**MS CLOUTHIER:** No.

**THE PRESIDENT:** And there are certain things we cannot do in terms of condition of licence because you’ve got some lawyers that will do --
MS CLOUTHIER: But you can strongly recommend.

THE PRESIDENT: I don’t think I need to recommend if CNL said they are already going to do that. We trust them and you should start by trusting them and see what happens in our annual report, you know, every year. When they come in front of us you can keep tabs about what is happening, I would argue.

Does CNL want to comment?

MS CLOUTHIER: Well, I could continue to argue too but I will desist.

--- Laughter / Rires

MR. COX: David Cox, for the record.

As I opened with, CNL is committed to engage with indigenous communities and in this case to establish a long-term relationship agreement, elements of which would be focused on the depth and breadth of the archaeological work that’s already under way and bearing some fruit.

We would look at strengthening roles for the Environmental Stewardship Council, which is a current means to communicate but taking into account a better understanding of the indigenous needs to understand our line of business and how we protect the environment and
understand the cultural aspects of our footprint.

**THE PRESIDENT:** And CNSC is also interested in you setting it up.

**MS CATTRYSSE:** Clare Cattrysse, for the record.

Most definitely. We have broached this before, but we definitely are looking at setting up indigenous forums.

Also whenever there’s offshoot issues too that want to be discussed in monitoring, and especially if we have a TK study come in the door that will give us more information about the land use concerns, I think without a doubt that is going to result in multiple meetings and much more understanding of what the issues are.

**THE PRESIDENT:** I think they are looking for formal systematic, kind of ongoing board that they call it, whatever it’s called.

**MS CATTRYSSE:** Yes, we are looking -- we are hoping communities would want to do this, but we are looking at indigenous engagement forums that are very much going to be formalized as a process.

We’re starting those out in New Brunswick, for example, this spring.

But also we are going to be consistently
consulting on the NSDF and the MPD project that we know that other groups are very interested in as well. So we will not be side-stepping any of those other meetings that are having to happen right now, because there are a number of issues we want to discuss.

Thank you.

**MS CLOUTHIER:** With respect, when one is in consultation one decides as a group, as the two parties together, what will take place.

To have something organized by one party and say this is how we’re going to speak to you, and then just show up and fit into that mould, is not consultation. That is information sharing maybe. It’s a nice meeting.

But consultation is the parties getting together, discussing what the relationship is going to be and then deciding how they are going to go about doing it.

So in fact we have no idea what shape that might take until we get into the actual consultation.

You can have all the best will in the world and you can organize meetings, forums, presentations, whatever. But that isn’t consultation. That is a presentation of information.

And not to be disrespectful, but it is checking off some boxes and it amounts to window dressing.
It is not true communication.

THE PRESIDENT: Thank you.
Dr. Demeter?

MEMBER DEMETER: I’ll see if I can find my button. There we go.

Thank you for the presentation.
I have a question. It’s a fairly direct question.

This is to CNSC staff.
On page 38 of the intervenor’s presentation there is a statement of accommodation that says:

"To date CRL has been operating without a Fisheries Act authorization and since the NRU will be shut down in 2018, it appears likely that they will never need an approval."
(As read)

So I just need confirmation as to one, whether they need a Fisheries Act authorization based on the current operations; and if they do, the status of that.

That’s a fairly bold statement that implies that they are not in compliance with some regulatory oversight, and I think that needs to be
responded to.

**MS TADROS:** Haidy Tadros, for the record.

We will pass this to our colleagues in the Environmental Protection group with regards to the *Fisheries Act* authorization.

And I believe we also have colleagues in Ottawa who can speak directly to the concerns raised by the Algonquins of Ontario.

**DR. DUCROS:** Dr. Caroline Ducros.

I am the Director of the Environmental Assessment Division, for the record.

Can you hear me?

**THE PRESIDENT:** Yes, go ahead.

**DR. DUCROS:** Okay, thank you.

I will just put a little bit of context around the *Fisheries Act* authorization.

In 2005 and 2006 when DFO was operating under the former *Fisheries Act*, they accepted at that time that the screen was not required to be installed on intake pipes and that the removal of relatively small numbers and biomass of fish was unlikely to have a significant ecological impact on the Ottawa River fish population.

However, moving forward, in the 2011 relicensing hearing CNSC did inform CNL that they must
monitor impingement, which they do regularly, and entrainment, to confirm that the numbers of fish impinged and entrained, that they had reported earlier due to the intake of water, were verified.

Then in 2012 there were changes to the *Fisheries Act*, which included a new prohibition, which was against the serious harm to fish. And that prohibition talks about death of fish.

As a result of this change and in terms of the fact that CNSC and DFO entered into a Memorandum of Understanding, CNSC requested that CNL provide a self-assessment of the serious harm to fish, in accordance with the guidelines that DFO has on their website.

CNL did submit their self-assessment to us in 2015. However, since that time CNL and CNSC have corresponded to review that data and also have requested additional information.

We are not at the stage now where we have made a conclusion on whether or not serious harm to fish is being caused of a magnitude that affects the local population in the vicinity of the operation. We are still in the review process for that.

When CNSC does their review, however, of the additional information from CNL, we will also be taking
into consideration the shutdown of the NRU in those numbers.

So that information has not all been reviewed, and these are reviews and information that we can discuss when we have the information. But we are not in a position right now to recommend to DFO whether or not a *Fisheries Act* authorization may be required.

**MEMBER DEMETER:** So just for clarity, there is a process that is ongoing based on a memorandum between CNSC and DFO, where CNSC will make consideration as to whether there is serious harm to fish.

And that is still in compliance with both the *Fisheries* and the CNSC Acts and Regulations.

What would be the timeline to inform DFO or to make the decision on whether it meets the test or not for serious harm to fish?

**DR. DUCROS:** Caroline Ducros, for the record.

I will pass it to my colleague and actually ask CNL if they can provide us with some timelines about when the additional information that we requested may arrive.

But in general the timelines of the review process are we try to do it as expeditiously as possible.
The legislative timelines only come into effect at the point when a proponent or a licensee submits a completed application for *Fisheries Act* authorization to DFO. And the legislative timelines are 60 days and 90 days; 60 days for completeness and 90 days for a Minister’s decision.

**MR. McALLISTER:** To complement Dr. Ducros’ answer, it’s Andrew McAllister, Director of the Environmental Risk Assessment Division.

We were given a bit more precision around the Fisheries Act process. Dr. Demeter, you mentioned the *Nuclear Safety Control Act*. Just to be clear, under the *Nuclear Safety Control Act*, there is no impediment to relicensing on this matter. We’ve looked at it under the *Nuclear Safety Control Act* and there’s no unusual risk to the fish populations in the Ottawa River.

**MEMBER DEMETER:** I guess I just needed some clarity that before the process becomes official for the request with these legislative timelines of 60 and 90 days to Fisheries, this has been looked at by CNSC and CNL.

Give me some sense of timelines for how long you have been looking at it, because once NRU is shut down, it may be moot. Right?

I want some confidence that the timelines
have been reasonable in looking at the issue before it becomes moot.

MR. McALLISTER: It’s Andrew McAllister.

I will start and if Dr. Ducros wishes to add, she can.

She did mention that we did receive their self-assessment in 2015.

A key aspect when looking at effects to fish is twofold. One is looking at the impingement. And so that -- those are the fish that are getting caught up in the screens are of a certain size. And then those organisms -- largely eggs and larvae -- that are small enough, they pass through the screens and through the system, we refer to that as entrainment.

In 2015 in that self-assessment, they had their information on impingement numbers, but the entrainment monitoring was missing. So that was a key one. And they had commitments in to do a two-year entrainment study. That study wrapped up this past year, 2017, and those results were -- initial results were forwarded to us. And some of the matters that we identified as far as outstanding technical concerns are related to that entrainment information about the eggs and larvae and what species they were associated with and more information
around the data collection that was done and some of the analysis was done.

So that's to give you a bit of a better idea of the sort of evolution of the review of the self-assessment.

**THE PRESIDENT:** But you know, I got problems with this. So this facility been running for 60 years. Did the *Fishery and Ocean Act* impose new condition recently? And now you got to go through a process to determine whether there's any impacts or significant impacts, even though they been running for, what, 50 years before that with nobody beside CNL -- besides CNSC doing environmental assessment about the impact? So here we are, we haven't even completed, and it's all become academic when NRU shuts down.

So why can't you close the books on this one way or another? Anybody? Ottawa?

**MS DUCROS:** Ottawa, Yes. Caroline Ducros for the record.

And you're correct. Under the former *Fisheries Act*, DFO did look at the impact on the environment and did conclude that there was not a significant ecological impact on Ottawa River fish populations.
And you're also correct that in 2012 the Act changed and the prohibition to serious harm to fish came into effect, which arguably is a smaller threshold, which is why we asked for a self-assessment to be conducted under the new Fisheries Act. And we will carry on this assessment as expeditiously as we can. But we will be taking into consideration the shutdown of the NRU, because that would be part of the assessment.

THE PRESIDENT: Thank you.


MEMBER McEWAN: So I have a question which I think is representative of a number of interventions.

Can somebody explain to me the duty to consult? In your submission you obviously feel clearly that there is, in the CNSC review they say there isn't. Can somebody explain that to me, please.

MS TADROS: So, Haidy Tadros for the record.

I'll start, and maybe I'll ask Ms Clare Cattrysse to fill in the details.

So the duty to consult is triggered when there is an impact from changes to operations or changes to effects of the environment. And for this particular file, and as presented by CNSC staff, the only real change or
significant change at the site that is being proposed and is coming forward in March is the NRU shutdown. There are no other projected changes to operations from what they are currently authorized to do.

So in CNSC staff's assessment -- and we do go through a determination for every file and every application that comes in to the CNSC -- for this particular file, there was no trigger for the duty to consult because there was no change to the ongoing operations at the Chalk River Laboratory site. If anything, with the NRU shutting down, there was or there will be a move to better safety of the environment to workers and persons.

So maybe Ms Clare Cattrysse can give a bit more on the legislated aspects of the duty to consult. But that's really how we got to there was no duty on this particular file.

**MS CATTRYSSE:** Clare Cattrysse for the record.

I think really all I can add to that is that although we were of the opinion formal duty to consult wasn't triggered, we have been out engaging with the AOO and other communities extensively. And to us it's really, really important, and we completely agree with the AOO on
intervention about building our relationship, having a productive relationship, and moving forward.

And that's where we're heading. And we want to keep moving forward in terms of trying to understand the issues, if there are issues around the site, and especially with any new potential applications on the site, such as NSDF, to continue. We'll be consulting on that file and we are consulting on that file, and we will continue to consult on that file because it is a new facility that is being proposed at the site. And we're available.

And to maybe respond to the comment about the forums, I just wanted to clarify that we're completely flexible about our approach. We're not -- we're not pushing things down communities' throats to say this is how it's going to be done. And it's completely the opposite. We've had some great experiences across the country where we've been working with the communities to find out how they want to be engaged.

The forums have been something that has been picked up as a starting point, but knowing that there are specific issues such as monitoring and studies that want to be done, we can go and do offshoot meetings and work with the communities together on those things. Thank
you.

**MS TADROS:** Haidy Tadros for the record.

Maybe, sir, just to wrap up with regards to the clarity on the duty to consult, we have our colleagues in Legal Services in Ottawa who can potentially shed some light on the legislated requirements for duty to consult in general. So I'll pass the mic over to Mr. Pierre-Daniel Bourgeau.

**MR. JAMES:** Hi there, my name is Mike James. I'm with Legal Services in Ottawa. Can you hear me?

**THE PRESIDENT:** Go ahead.

**MR. JAMES:** Great.

To answer the question -- and it's already been indicated, I believe -- but the duty to consult is triggered when there is a potential government decision that could affect a potential Aboriginal or Treaty right.

So in the case of the -- of this hearing, if there's a decision that --

**THE PRESIDENT:** Excuse me, are you --

**MR. JAMES:** -- has the potential --

**THE PRESIDENT:** Excuse me, sorry. Are you using a mobile or handsfree? Hello?

**MR. JAMES:** Hi. Can you hear me?
--- Laughter / Rires

THE PRESIDENT: Yes. I don't know what you're doing, but it's getting a lot of interference.

MR. JAMES: Okay, sorry. I was four inches away from the microphone, but I'm swallowing it now, so I think it's working better.

--- Laughter / Rires

THE PRESIDENT: Well, we can hear you better now. Go ahead.

MR. JAMES: So as I was saying, the duty to consult is triggered when government is considering a decision that has the potential to adversely impact an Aboriginal or Treaty right.

So in the present case, what has to be considered is whether there is anything that could arise from a Commission decision that has the potential to adversely affect an Aboriginal or a Treaty right that is currently being exercised.

THE PRESIDENT: Okay. This is a legal answer. I'm not sure ...
speakers]

THE PRESIDENT: -- and I'm not sure I think, as CNSC suggested, we -- I think I hear they're not too concerned about whether it's legally triggered or not. But they're fully accepting the need to engage and participate. And I think what I've heard is good will on all sides and I think it'll happen if I conclude what I heard.

Anything you want to add?

MS CLOUTHIER: We don't have the benefit of our legal team here either.

I would say that there is a case to be made that we should be consulted. The reclamation -- some of the work done at the site is extensive. Just the fact of the nature of the industry at that site on unceded Algonquin territory, the loss of the use of land, the possible effects on the fisheries -- I don't know; I think a case could be made. And we are making it.

THE PRESIDENT: So while I got you here, since I'm just interested, so where -- what is the status of the approval in principle, with the [indiscernible - multiple speakers] --

MS CLOUTHIER: The agreement in principle?

THE PRESIDENT: Yeah, agreement in
principle.

**MS COUTHIER:** We signed that in 2016. We have -- we are working towards the treaty, of course. We're working -- we have a five-year very intensive work plan. We're hoping that in five years we can get it done.

It's a claim that is like no other. It is massive. And we're building a claim in a land that is already occupied. There's very little of the actual land left for Algonquins to claim. So I don't know. It's massive.

**THE PRESIDENT:** But I was wondering whether this facility --

**MS CLOUTHIER:** Yes.

**THE PRESIDENT:** -- and that particular land is a piece that would be under consideration under this --

**MS CLOUTHIER:** No.

**THE PRESIDENT:** -- agreement.

**MS CLOUTHIER:** We're not -- we're not naïve enough to think we could get that little piece of land back and make it ours.

**THE PRESIDENT:** I didn't say back, but at least to consider the history of that particular land, yeah.
MS CLOUTHIER: Yeah, the history yes.

MS MIELKE: [speaking off record]

MS CLOUTHIER: Yeah, okay.

It is, as I'm told, the subject of the treaty negotiations. I'm not sure what that means, but anyway.

--- Laughter / Rires

MS CLOUTHIER: This is a very complicated thing.

THE PRESIDENT: It's probably the place you should argue some of those --

MS CLOUTHIER: Yeah, I should quit now, eh?

--- Laughter / Rires

THE PRESIDENT: Oh, no, no.

MS CLOUTHIER: Okay, thank you. I like that.

Thank you very much for listening to us.

THE PRESIDENT: Well, thank you for the presentation. I really enjoyed it.

So we will be moving right along to a presentation from Ontario Power Generation as outlined in
CMD 18-H2.21.

I understand that Mr. Manley, you'll make the presentation. Over to you.
--- Off record discussion / Discussion officieuse

CMD 18-H2.21

Oral presentation by Ontario Power Generation

MR. MANLEY: Mr. President, Commissioners, and members of the public. My name is Robin Manley. I am the vice-president Nuclear Regulatory Affairs and Stakeholder Relations at Ontario Power Generation. OPG operates 10 CANDU reactors at our Pickering and Darlington nuclear power stations.

It's my pleasure to be here today to provide OPG's intervention to Canadian Nuclear Laboratories' application for the licence renewal of the nuclear research and test establishment licence for its Chalk River Laboratory site, as described in Commission Member Document CMD 18-H2.1.

OPG supports the renewal of the CNL licence as requested in their CMD and as outlined in CNSC staff's CMD 18-H2.

The Canadian Nuclear Laboratories Chalk
River Facility provides a large number of very important research and development functions on behalf of the Canadian nuclear power plant industry as a whole, including OPG. I will speak to a few of those in a moment.

In its written and verbal submissions, CNL staff have described the many safety improvements and enhancements that have been made over the last licence period and others which are planned for the future licence period. And I will touch on a few of those as well.

In addition, CNSC staff in their written CMD have described how CNL has met the regulatory requirements, how CNL has satisfactory ratings in all safety and control areas, and how CNSC staff have concluded that CNL will, in carrying on that activity, make adequate protection -- adequate provision, excuse me, for the protection of the environment, health and safety of persons, et cetera.

Moreover, today you have heard from CNSC staff their assessment of and response to the range of concerns raised by a few members of the public. And I will close my remarks by making a few comments on those points.

The CNL Chalk River site plays a crucial role in research and development in the Canadian nuclear infrastructure. The importance of this work in the
development of the homegrown Canadian industry cannot be overstated, and as discussed in CNL's CMD, their ongoing work program is critical to the future success of the nuclear industry in Canada.

The Commission heard earlier today an update on the nuclear power plant fuel channel research work. As just one example of many current research projects underway at Chalk River in support of OPG's ongoing nuclear program, CNL has been working closely with industry on fuel channel research and development activities.

As you heard today, the fracture toughness of fuel channels is a key parameter which we and CNSC staff must be confident we understand. CNL has developed a proprietary process that enables industry to take pressure tubes removed from a reactor and artificially age material from those pressure tubes in a hot cell up to and beyond the predicted end of life conditions. Then they conduct burst tests to obtain important information on fracture toughness to validate predictive fracture toughness models. Some of these models are available to the entire industry through CSA standards for use in fuel channel fitness for service assessments. This work also enables industry to look down the road and strategically plan the operational
life of our units.

CNL staff perform research and development at Chalk River on a wide range of other areas important to CANDU reactors. I will mention four, but please note this is only a small subset of such work.

First, work on steam generator deposits. This is important to understand the life cycle management, maintenance, and cleaning requirements to ensure that our steam generators or boilers operate safely and reliably.

Second, models and assessment of in-reactor core material deposition, transport, and release during outages. This is important to understanding where the radiation hazards are in our plant and how to keep doses as low as reasonably achievable.

Third, studies on concrete aging and degradation. It is important to continue our in-service inspections of our concrete structures so that we always know we have lots of future service life and can reliably predict problems before they arise.

And fourth, various studies on potential causes and mechanisms for feeder corrosion or cracking. It's fundamental to safe operation of CANDU plants that we understand aging and potential failure mechanisms in our stations.
Looking ahead into the future, another notable area where CNL is an industry leader is in its capacity for the demonstration of the commercial viability of advanced reactors including small modular reactors and very small modular reactors. And OPG is very interested in that field as well.

Below I will briefly highlight a few of the very important safety practices which CNL has in place and which can be noted in their CMD.

CNL has established the direction and core values to ensure that nuclear safety is paramount. Through their nuclear management system, they have established the necessary controls and safety culture to ensure conventional and radiological safety, environmental performance, and security requirements are in place.

I noted many safety enhancements are discussed throughout CNL's submissions, including:

- infrastructure upgrades such as a guaranteed Class III power system for its information technology data centre;
- introduction of a dedicated live firefighting training complex -- OPG has one of those as well;
- new personnel contamination monitors and
area or airborne monitoring capability;
   - and numerous severe accident management upgrades to their Emergency Operations Centre and Emergency Preparedness Program.

OPG notes that CNL has the same kinds of industry standard management systems and safety practices in place as nuclear power plant licensees in Canada and world wide. These include, for example:
   - a suite of human performance event-free tools to minimize human error;
   - continuous behavioural observation program as a fitness for duty program element;
   - safety culture surveys;
   - a corrective action program;
   - rapid learning morning calls;
... and the list goes on.

In terms of CNL's strong safety performance over the past licensing period, OPG notes the following:
   - no worker received a dose in excess of any dose limits in the Radiation Protection Regulations;
   - the overall worker average dose was consistently low as were the maximum worker doses;
   - an improving trend on both lost time
accident rate and severity rate;

- and the dose to the most exposed member of the public is below the regulatory limit as well as below the even lower licensed dose constraint.

It is also worth noting that CNL's an active participant in the CANDU Owners' Group forums for sharing industry operating experience and best practices. This includes, for example, participation in the many industry working groups on implementation of CNSC regulatory requirements such as those on fitness for duty and our chief nuclear officer's forum. Such participation ensures that CNL benefits from the same learnings and best practices as do Canadian nuclear power plants.

OPG notes that CNSC staff continue to make enhancements to the structure and the format of licence condition handbooks, or the LCH, and that in the case of CNL, the proposed LCH is improved from the previous version. OPG support such ongoing and continuous improvement to LCH structure to improve their usability.

In our own experience, the licence reform project described in CNSC staff's supplemental CMD 18-H2.A has resulted in several benefits to CNSC staff and OPG in practically managing our licence conditions, and I would suggest these are benefits also to the public in terms of
being able to understand the licence conditions and thus to ask questions of licensees and the regulator.

The new structure is much more clear on what is required and how compliance to those requirements is measured. The structure also enables more consistent application of requirements between licensees where appropriate, and we can clearly understand why the specific activities at our site may require additional or different compliance verification criteria.

Finally, and with respect to the point about a shorter licence condition handbook, in my own experience we have found substantial benefits to clarity and certainty of requirements by removal of some redundant or repetitive wording in the first version of the LCH. It is not helpful to repeat word for word -- or worse, paraphrase -- licence requirements documented elsewhere in the LCH, in the REGDOCS, or in the reference CSA standards. That is not best practice. So I would like to recognize the efforts of CNSC staff in improving clarity and reducing the opportunity for error by their ongoing continuous improvement of the LCHs.

Finally, I would like to briefly comment on my own experience of the robustness of CNSC staff's inspection of licence condition 1.1, that "the licensee
shall implement and maintain a management system." An intervenor pointed out that this licence condition appears lacking in much detail; however, this licence condition in the LCH points directly to the requirement to comply to CSA standard N286. This is a 54-page document with over 100 specific requirements. CNSC staff in their inspections at our sites routinely evaluate us against these specific requirements and report what they find.

In conclusion, CNL has operated its facilities safely, and I am convinced CNL will continue to operate them safely and in compliance with regulatory requirements. OPG fully supports renewal of this licence for the operating period requested.

Thank you. And I am ready to take any questions you may have.

THE PRESIDENT: Thank you.

Questions? Dr. McEwan.

MEMBER McEWAN: So, thank you. I'm just going to make perhaps an unfair comment, but maybe you'd like to comment on it.

You note that CNL benefits from the same learnings and best practices as do the NPPs, and yet over this licence period they have had in fitness for service five years where they were unable to get beyond "below
expectations" in terms of their evaluations. So that doesn't seem to me to be fitting in with the best practices of the MPPs. How do we have confidence that that has been turned around from the perspective of somebody who is involved in NPP running?

MR. MANLEY: Robin Manley for the record.

I don't think I can specifically comment on why the rating of their facility was what it was. However, what I would say is that within the nuclear industry community, our goal is continuous improvement and learning from others and protecting the reactor core, protecting the public. So one doesn't do that in isolation and there is always an opportunity to learn from others.

And so what I would suggest to you is that if you maintain that dialogue, there's always an opportunity for us to pull each other up by our bootstraps.

So there's times when we have learned from what CNL has done, not just from their research and development activities but they were a leader, for example in the implementation of the nuclear material accountancy reporting program. So we intend to leverage what they learned to do it better in that regard in our area.

Likewise, you know, whenever the CNOs are together when I have observed them in service -- sorry, in
these meetings -- they're talking about opportunities to improve the effectiveness of the work management program, the maintenance program. I have seen Dave Cox there and he listens and participates in those discussions with Lynn Clewett (ph) and Glen Jagger (ph) and the others.

MR. COX: David Cox for the record.

Acknowledge the comments from Mr. Manley. I'll limit my comments to the equipment reliability elements.

Mr. Manley referred to the fact that through the CANDU Owners Group and through other forms there is vigorous sharing of operating experience and lessons learned. I think the fitness for service improvement that we realized for the 60-year old NRU reactor was significantly influenced by the learning we extracted from the CANDU operators, specifically in the area of equipment reliability and maintenance effectiveness.

So that's an example where we learned from the big brothers operating the CANDU reactors and applied those lessons to NRU successfully over a period of time.

THE PRESIDENT: Thank you.

Questions? Mr. Seeley?

Go ahead.
MEMBER SOLIMAN: Thank you for the presentation. On page 2, the last line, OPG is saying that the LCH has improved from the previous version. There is many questions really suggesting that there is a relaxation of the rules. I would be pleased to hear from you support for that, if you can support the CNSC that the proposed licence has been improved as you said in that last line on page 2.

MR. MANLEY: Robin Manley for the record.

So I've been in the regulatory affairs business at Ontario Power Generation for some six-odd years now. As well, previous to that I had considerable experience with our licence and the licence requirements at Ontario Power Generation.

So I am familiar with how the licence structure was previously and the evolution as we went through the implementation of the licence condition handbooks.

And so while I'm less familiar with the case for the Chalk River LCH, I think the broad trajectory is similar, that as we've gone through the process of very, very different licences to the introduction of licence condition handbooks which had some degree of similarity but still had to be built upon the foundation of the previous
licence conditions, and then the increasing similarity between the licence condition handbooks, what we've seen is that the LCHs' readability and, thus, the understandability of it has improved over the years.

And then as the CNSC staff have been performing their in-field inspections, the day-to-day walk-around inspections, the actually planned Type 2 inspections and the desktop reviews, what I have seen over the last couple of years is a more clear explanation of how the facts support the findings, support the action notices, and how that's better tied to the licence and the licence condition handbooks.

It has been an evolution. You know, I will tell them from time to time that I am still not always happy, but what we have seen is it's easier to understand where there is a gap that they have identified. I think that the increased clarity in the LCH where there is not, you know, paraphrasing of what is in a CSA standard but, rather, it just references it directly, that way there is -- you remove that potential for misinterpretation and, well, do I have to follow the LCH or do I have to follow the standard which is referenced in the LCH?

So we have seen an improvement in, I would say, the performance in that regard.
MEMBER SOLIMAN: Thank you.

THE PRESIDENT: Questions?

So I have just one. You mentioned about all the research work done by CNL for the NPPs. What you will be missing with the NRU shutdown in terms of direct research for your operation?

MR. MANLEY: Robin Manley for the record.

President Binder, I don't know that I can actually answer that. You know, what I think of when I think of NRU, rightly or wrongly, is I think of the radiopharmaceutical or radioisotopes. That's what I think of as the medical.

THE PRESIDENT: I thought you tested on some of the pressure tubes and some of the material actually in the core sometimes, did you not?

MR. MANLEY: Not to my knowledge, President Binder.

THE PRESIDENT: CNL, can you help me with that? There were paying customers you're going to lose now.

--- Laughter / Rires

MR. COX: David Cox for the record.

NRU has multiple uses; isotope production being one of them. But materials testing and fuel testing
are other functions. Materials testing is an active area where NRU has been used but not exclusively.

I will ask Dr. McCarthy to provide some elaboration on how we use other facilities outside of NRU in order to meet the industry needs.

**DR. McCARTHY:** Kathy McCarthy for the record.

So the loss of NRU and the loss of onsite neutrons is a challenge for us that we need to address.

We do currently radiations offsite and what we will be doing is building on that while we have this neutron gap. For example, we historically use the Halton reactor or currently using the Oakridge hyper reactor. So what we will do is expand on our offsite radiations and our goal here is to provide a service for our various clients but we will be doing is accessing offsite neutrons.

**THE PRESIDENT:** Okay, thank you.

Anybody else? Any more questions? Anything else you want to add?

Okay, thank you. Thank you very much.
CMD 18-H2.18

Oral presentation by Women in Nuclear Canada

THE PRESIDENT: We will move to the next submission, which is an oral presentation by Women in Nuclear Canada, as outlined in CMD 18-H2.18.

I understand that Ms. Mosscrop Kee will make the presentation. Did I get the name right?

Over to you.

MS MOSSCROP KEE: Good afternoon President Binder, Commission Members and members of the public.

My name is Larkin Mosscrop Kee. I am the Women in Nuclear, Eastern Ontario Chapter Chair. I am also a project manager at Canadian Nuclear Laboratories.

I am here as a member of WiN Canada and presenting on the findings of a technical review completed by Pauline Watson who is a WiN member not associated with CRL.

I'm not here today to speak on behalf of all women in Canada. No organization can accurately make that statement. What I can claim is that WiN Canada represents over 1,700 women and men across Canada and nearly 1,000 of them who reside in Ontario.

While many WiN members are employed in the
nuclear energy sector, WiN Canada welcomes members from industries who use other nuclear and radiation technologies such as hospitals, medical facilities, mining, academia and research institutions like Chalk River Lab, and as well the suppliers that support all of these industries.

WiN Canada's goals are to open a dialogue with the public on the contribution that nuclear technologies make to society; to facilitate the exchange of knowledge and experience among our members and with the public, and to promote an interest in nuclear-related careers among women and young people.

As our industry is made up of less than 20 percent women, Women in Nuclear works to show showcase the vital contribution that women make as leaders in our industry.

WiN members devote a great deal of our volunteer time working with young women and girls, introducing them to non-traditional but rewarding careers in science, technology and the skilled trades.

Women are strong opinion leaders in our country. It's important for our voices to be heard, including our support of all aspects of the nuclear industry and the renewal of the Chalk River Laboratories licence for a 10-year period.
Canadian Nuclear Laboratories has been very supportive of Women in Nuclear, Eastern Ontario Chapter; our programs and our events, the advancement of women and highlighting the important role that women play in our industry. We currently have over 250 Women in Nuclear, Eastern Ontario members.

Canadian Nuclear Laboratories' support ranges from mentoring the WiN Eastern Ontario board to sponsoring our member events, to hosting our 15th annual Women in Nuclear conference held last October in Ottawa.

These opportunities to network within our organization are important as they provide us an opportunity to connect with like-minded individuals and work together.

Women in Nuclear Canada members come from a variety of work experiences and education. They are involved at every level of our organization from research and development to waste management and decommissioning, from maintenance workers, operators and radiation technicians, to name a few, as well as including all levels of administration and senior management. We are all highly skilled workers who could work at any industry but we choose to work in nuclear because we know that we are helping to support the nuclear energy fleet, provide
creative solutions in nuclear science and technology, provide isotopes for medical and industrial applications and to promote a safe and environmentally sound future for nuclear technology.

Although women are generally underrepresented in the nuclear sector's workforce, WiN Canada members will continue to play key roles in the continued safe operation, revitalization and decommissioning covered under the licence renewal.

The site revitalization will also provide professional growth opportunities for women who currently work in our industry and for Canada.

WiN Canada believes that CRL offers excellent career opportunities for women in stem fields and has several planned initiatives during the relicensing period which will contribute to greater growth and more opportunities for women at CRL.

There is a recognition of the need for Canada to make full use of all of its talent, to be competitive in the skilled trades, science, technology, engineering and mathematics. And with the support of organizations like WiN Canada, we are poised to take advantage of this historically untapped resource.

Other industries have similar women's
groups but none of them as far-reaching as WiN. Women in Nuclear Global has some 35,000 members worldwide, all working to promote an interest in nuclear-related professions among women and young people.

Many women work at Chalk River Laboratories by choice and their families live in the communities surrounding the labs and associated waste management facilities. WiN Canada highlights that radiation protection is an area of heightened interest to WiN members in particular and to women in general. The fact that dose levels to workers and to the public have been well below regulatory limits is reassuring and aligns with the conclusion that the RP program at CRL is adequate for future safe operation.

We all understand our responsibility to work safely not only to ensure the safety of our colleagues, but to ensure the safety of the communities in which our families, our children; our friends all reside. We do not take this responsibility lightly and put safety first each and every day. This strong culture of safety carries over to our activities outside of work and in our volunteer communities -- volunteer activities in the community.

WiN believes that the initiatives that CRL
has planned during the licensing period will be adequate for continued safe operation of the facilities.

Conventional health and safety are issues of particular importance to women employees at CNL, particularly the awareness of occupational hazards and prevention of injury. The review notes that the improving trend in recordable lost time accident frequency and severity are signs of an effective health and safety program. Additionally, the conventional emergency management and fire protection program should ensure that there is no additional safety risk to women and our colleagues during the proposed extended period of operation.

Surveys commissioned by the Canadian Nuclear Association show that women are particularly concerned with the effects of nuclear on the environment. So this aspect is very important for the support of nuclear technology.

Based on past performance and future plans discussed in the CRL application for licence renewal, WiN Canada believes that CRL is committed to protecting the environment and has added several sustainability objectives, in line with the 2016-2019 federal sustainable development strategy.
Waste management is an issue of great importance to WiN members and women in general. WiN Canada is confident that CRL had adequate plans and talented staff for waste management, remediation of waste management areas and future removal of high-level waste.

To sum up, we want to stress that WiN Canada members are highly-skilled workers and would not be working in the nuclear industry if we did not believe in the technology and its safety. It is important to all of us that when we leave for work in the morning that we come home at the end of the day, and that our families and friends who live in our communities will be safe each and every day.

And because of our day to day interaction with the nuclear industry and our strong belief in the expertise of CNL's employees, and their proven history of safe operation and responsible waste management, Women in Nuclear Canada supports the Chalk River Laboratories' application for a 10-year licence.

Thank you.

THE PRESIDENT: Thank you. Question? Dr. Soliman?

MEMBER SOLIMAN: My question to CNL. What future plans throughout each of the WiN organization -- or
association, I mean?

**MR. COX:** David Cox for the record.

I will ask Dr. McCarthy to provide comment.

**DR. MCCARTHY:** Kathy McCarthy for the record.

We participate in many of the WiN activities. I found WiN Canada to be -- they are a very strong organization. They put on a lot of activities for development of women, development of young women. So I can tell you I have personally participated in some of their meetings. It is an organization that does a lot of very good things.

Now, one of the things that we recently announced is that our new partnership with the Foundation for Student Science and Technology in this particular organization they have a focus on young women. So in general, CNL is doing -- it does have activities, outreach to women and to young people in general because we need to attract young people into the field at the K through 12 range so that they are actually interested once they are choosing their career.

**THE PRESIDENT:** What is the percentage of women in CNL onsite?
MR. COX:  David Cox for the record.

We will provide you with that number after the dinner break. We don't have it on the tip of our tongues at the moment.

If I could just add to what Dr. McCarthy said though, we actively support participation in WiN and provide time and other support for individuals to participate in some of the conferences and forums that make up the WiN organization.

THE PRESIDENT:  Question?  Mr. Seeley.

MEMBER SEELEY:  Maybe just an elaboration on the percentage of women in the workforce. Perhaps if you're going to dig those numbers out, it might be nice to have a comparison to the percentage of women in the broader nuclear workforce in Canada.

THE PRESIDENT:  We don't want to compare with other industries, by any chance?

--- Laughter / Rires

THE PRESIDENT:  Mr. Demeter...?

MR. DEMETER:  Thank you for the presentation.

In your written submission there was a comment on page 1 about identifying real and perceived risks to female workers and the adequacy of personal
training in a work organization and job design.

I wanted to get a sense from you as members and perhaps from CNL, about their ability to accommodate female-specific issues such as pregnancy accommodation, breastfeeding -- daycare is both male and female but, you know, is it there? Do you have a sense or remember that outside of the sort of conventional health and safety and radiation and job training, is there accommodation for women in these other areas that are more social determinants of health?

**MS MOSSCROP KEE:** Larkin Mosscrop Kee for the record.

I know personally that the program that they have at CNL for pregnancy and breastfeeding is very developed. There are breastfeeding stations throughout the facility as well for those who are still pumping while they return to work, as well as having the opportunities to have direct contact with a health physicist who monitors you throughout your pregnancy with -- and makes you feel very comfortable with the types of protocols that you will have engaged, as well as is very open to discussions about the types of work that you are doing and how they can modify it accordingly.

So I feel like Chalk River Labs is very
open and very accommodating and is very strict on what they allow pregnant women to do, but allowing them to continue in their work until they go on leave.

As well as just as a note about parental leave, Chalk River Labs has one of the best parental leave policies I think I have ever seen, making women feel very comfortable to leave, and as well as take time to come back and interact with the company throughout at their own kind of discretion and how much they would like to be involved.

Did that answer your question?

THE PRESIDENT: Thank you.

MEMBER McEWAN: A slightly more philosophical question, but the structure and the nature and the future of CRL is changing very significantly with the shutdown of NRU and with the new plans that CNL have put forward. Do you see for your members any significant risks or any significant opportunities as those changes occur and as all of the construction and changes on the site occur?

MS MOSSCROP KEE: Larkin Mosscrop for the record.

I think that there is a lot of opportunity at Chalk River Labs throughout the revitalization. I see new facilities coming up actually improving the safety
onsite in terms of occupational health and safety. I also see it as being a more collaborative environment where women are more included. I know personally that I have seen more women onsite than when I first started even five years ago.

And I think with the revitalization we are going to start to see a growing research and development focus, a growing biology focus which also are, you know, pretty high women fields in the first place. I am a biologist.

And so I think that there is a lot of opportunity. Of course with any change there is risk, but I also believe that Chalk River Labs is able to manage those risks and has been doing so with very open communication, working with myself as the chapter chair to really engage with the Women in Nuclear members and get feedback on a regular basis.

**THE PRESIDENT:** I have two quickies. You mentioned a survey, national survey. Have we seen -- is there a survey result posted anywhere? This is the...?

**MS MOSSCROP KEE:** The Canadian Nuclear Association survey?

**THE PRESIDENT:** Yes.

**MS MOSSCROP KEE:** I can get that for you.
It's a really interesting survey.

THE PRESIDENT: Is it 2015 Nuclear Attitude survey; right?

MS MOSSCROP KEE: Yeah. Yes.

THE PRESIDENT: Staff, are you familiar with it?

No, I know. I want to know why they don't know about it.

--- Laughter / Rires

MS TADROS: Haidy Tadros for the record.

I believe, sir, there was a presentation by the Women in Nuclear previously on a different file and the survey was presented in terms of the results that came together, but we don't have it with us.

THE PRESIDENT: No, I'm just curious if it's -- you know, if it's really useful that's why it's not posted. I believe in posting some of those results.

Also, I actually enjoyed your contracted reviewer to do the thing, but I was curious. On page 8 the reviewer raises some concerns which I actually didn't understand.

This is on page 8, I'm on page 8: concerned that the environment be protected during the proposed changes, which was kind of a curious observation
where this is a fundamental kind of objective of CNL.

And he's also concerned with the objective of sustainability. Please explain.

**MS MOSSCROP KEE**: Yes. Larkin Mosscrop Kee for the record.

So, that finding was such -- more of a reminder or a note of interest. With all of the changes that are happening with that at CNL and at CRL is to be always mindful of improving our infrastructure in a sustainable way.

And also, with all of that decommissioning, we see that there will be a lot of waste generated from that and, as such, to be environmental stewards.

And I think understanding the environmental programs on site and then, also understanding the methodology and planning that's going into our decommissioning activities, I think that that concern was brought up as more of a point of note than an actual realized concern.

So, if that helps.

**THE PRESIDENT**: Well, staff, is there anything in that particular list that could be of concern?

**MS TADROS**: Haidy Tadros for the record.
So, as staff's CMD indicates, we have all of these potential points on our radar and maybe I'll ask our colleagues in the environmental protection group to address any questions or concerns that they see on this list.

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

Certainly in looking at the list these were some of the matters that we highlighted in our environmental assessment report to the attention of the Commission.

There's nothing there that is giving us cause for concern in that the -- as indicated, CNL has a robust environmental monitoring program in place, as well as an effluent monitoring program.

For example, concerns are raised around groundwater plumes, but we talk about groundwater monitoring, we talk about effluent monitoring. So, it's sort of defence in depth that's in place to ensure that no surprises arise.

And with that, in our environmental protection framework, with those monitoring programs they in turn go and will inform the next revision of the environmental risk assessment which is due later this year.
So, overall there are some concerns. We feel they're being adequately managed within their overall environmental protection program and that continuous sort of cycle of monitoring and updating the ERA will continue.

And I'll -- don't know if somebody had anything to add.

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

Anything else? Any final thoughts?

Go ahead.

**MS MOSSCROP KEE:** I just wanted to say as a final note that Canadian Nuclear Laboratories has been very supportive of Women in Nuclear. Our chapter is fully supported by Canadian Nuclear Laboratories and we are always encouraged with the amount of support and care and time that the Executive as well as the whole team there does give to us.

So, that's all. Thank you.

**THE PRESIDENT:** Thank you.

So, we are in the unusual time that we have some free time and what we're going to do is, we're going to do some written submissions.

Kelly, which one is starting -- and it's going to take us a while to find them. Are we all there?
THE PRESIDENT: The way we do this, Kelly will read them out and anybody who has comment, please jump right in.

Go ahead.

MS McGEE: Thank you, Mr. President.

CMD 18-H2.2
Written submission from
Renfrew County Catholic District School Board

MS McGEE: The first written submission is from the Renfrew County Catholic District School Board as outlined in CMD 18-H2.2.

Are there any questions?

THE PRESIDENT: No.

CMD 18-H2.3
Written submission from Garrison Petawawa

MS McGEE: The next written submission is from Garrison Petawawa as outlined in CMD 18-H2.3.

Are there any questions?

THE PRESIDENT: Dr. Demeter?
MEMBER DEMETER: The written -- am I on? Yeah. The written intervention talked about some positive relationships with the Garrison and some shared activities.

I was curious if this was any deeper in relation. Is there an actual Memorandum of Agreement with the Department of National Defence? Is there a stronger partnership versus just mutual aid with a garrison that happens to be close by? I was just curious if there's a larger picture here that feeds into that?

MR. COX: David Cox for the record.

As our nearest neighbour on the south and east side, Garrison Petawawa, of course we have a strong relationship with them.

I'll ask Kevin Daniels to provide some elaboration on some of the areas where we do have formal agreements with Garrison Petawawa.

MR. DANIELS: Kevin Daniels, Vice-President of Health, Safety, Security and Environment for the record.

So, we actually have some mutual aid agreements in fire and security that we have put in place, but most of our interactions with them are also things like charity events and things like that that we deal with them, but we do have some mutual aid agreements.
It's not any higher up to the Department of Defence, it's pretty much between them and us. And we have actually done some exercises where we've had some of the people from the garrison over at our site, some exercises together.

**MEMBER DEMETER:** Thank you.

From CNSC's point of view, are there any other relationships between -- given the other nuclear power plants, with relationships with local military or police that have a similar kind of flavour?

**MS TADROS:** Haidy Tadros for the record.

So, the CNSC doesn't have any sort of Memorandum of Understanding with the Garrison of Petawawa or any other sort of affiliation. We would look to the licensee, in this case CNL, to ensure that they have what they need in place to ensure emergency management programs meet regulatory requirements and they conduct their own sort of operations with those in the vicinity of the site, but nothing that CNSC staff would have direct implications to.

**MR. DEMETER:** Thank you.

**THE PRESIDENT:** But they use -- I don't know what the deals are, but there's some relationship between some of the NPPs and the Durham Police Corporation
in training, things of that nature. I don't know the nature of the agreement now.

Go ahead.

MR. COX: Okay. Go ahead, Kevin.

MR. DANIELS: Yeah, Kevin Daniels for the record.

So, also in some of the other areas, so this isn't like a Memorandum of Agreement, but as far as things like studies on species at risk and those types of things and from an environmental standpoint, we share a boundary, we share information, there's common, you know, land between us, so we have a number of those things that we work together with them on. And in fact, they come to the Environmental Stewardship Council on a regular basis.

MEMBER DEMETER: Thank you. I just wanted to see if it was a neighbour thing or if it was a more national thing. Thank you.

CMD 18-H2.4

Written submission from Ed Barbeau

MS McGEE: The next written submission is from Ed Barbeau as outlined in CMD 18-H2.4.

Are there any questions?
MEMBER McEWAN: So, I think this is a question for staff.

The intervenor is concerned. He highlights a number of concerns, but particularly about the disposition of contaminated structures and the disposal of nuclear waste.

I mean, specifically we are not looking at the NSDF, but can we give him some reassurance that there is a plan in place that this will be addressed as we go forward?

MS TADROS: Haidy Tadros for the record.

And again, as you've noted, sir, the NSDF being sort of outside of the considerations here that the concerns that are raised is more holistic in terms of the plan overall and I think, given CNL's work on a long-term plan, any considerations for any change of activities will come before the Commission for decision and for consideration.

Staff, and as we have noted, are going through the environmental assessment of new proposals as well.

So, given the regulatory process that is at play, there will be multiple opportunities for public comment, public intervention raise of concerns.
So, the reassurance that we can provide at this point is for this particular file, given the information that is before the Commission, there is no concern, there is no hazard. Programs are in place, they are effective for the purposes of what CNL wants to continue to do.

Going forward, should plans change, considerations and this audience will be brought together again to make decisions on that.

**CMD 18-H2.10**

**Written submission from Esprit Whitewater**

**MS McGEE:** The next written submission is from Esprit Whitewater, as outlined in CMD 18-H2.10.

Are there any questions?

**MEMBER SOLIMAN:** The intervenor has some comments about the relaxation of the rules and licence. Would you please shortly address this?

**MR. LeCLAIR:** This is Jean LeClair for the record.

I believe if the Commission looks at the Staff supplemental CMD 18-H2.A, we provide a lot of information, I think, that clearly lays out that there is
no intention and no effort to reduce requirements, nothing is being lost, but I'm sure we'll be discussing this a number of times throughout the next few days.

But we presented that through the supplemental, which I believe certainly clearly lays out that we've kept everything intact, that the information is there, and the requirements are not being relaxed.

**MS TADROS:** Haidy Tadros for the record.

So maybe I can just perhaps give assurances, because I take that this intervenor has taken the time write in their concerns. I think as a written intervention there is, of course, as my colleague has indicated, the supplemental CMD that is available to use and to review.

But given the external concerns around relaxation of regulatory requirements, it is incumbent on CNSC Staff to ensure that regulatory oversight is maintained as per the act, and we have multiple mechanisms to do so, the LCH, the licensing basis, once it's established and decided upon by the Commission. And moreso from day-to-day operations, CNSC Staff's compliance verification activities are ongoing and will be focused on all of the compliance verification criteria that are set out in the licence and the reporting requirements that CNL
need to abide by and bring forward.

I'm not sure there are enough points to cover for this particular concern, but as Mr. LeClair said we'll have an opportunity to go in depth in terms of examples and analysis of what currently exists and what the proposals are. But given the written submission here, I believe that there will not be any regulatory relaxation of requirements. If anything there will probably be more scrutiny with regards to the licensees' documentation and holding them to account to what they say they were going to do.

**MEMBER SOLIMAN:** Thank you. That is quite enough.

**THE PRESIDENT:** CNL, do you want comment whether you have less conditions now? And the regulatory oversight is relaxed -- let me ask you it differently. Do you like the change between the current LCH and the new LCH, and why?

**MR. COX:** David Cox for the record.

Let me begin by saying that CNL does not perceive that we're being deregulated. I think that the regulatory requirements, you know, do continue to evolve. Additional regulatory documentation comes into force on a regular basis, and that adds to the requirements that need
to be met.

But we do appreciate the streamlining or simplification of the licence and the Licence condition handbook. I think Mr. Manley said quite well, from OPG's perspective, which I would echo, that the effort to streamline and provide single-point clarity on requirements is very beneficial to licensees in general.

In particular to ourselves, we have a complex site, with a wide variety of operations, and so the Licence condition handbook is, in our view, significantly improved in terms of providing clarity on the requirements, really, through referencing down to REGDOCs, codes, and standards, as opposed to repeating or paraphrasing requirements that in previous forms had bulked up the content of the Licence Condition Handbook.

THE PRESIDENT: Thank you.

--- Off microphone / Sans microphone

THE PRESIDENT: Oh, no, you can take a couple more.

MS McGEE: Are you sure?

THE PRESIDENT: Yes.

MS McGEE: Yes sir.

THE PRESIDENT: We are on a roll. We may as well use it.
MS MCGEE: The next written submission is from Danielle Paul, as outlined in CMD 18-H2.11.

CMD 18-H2.47

Written submission from Sheila Marchant

MS MCGEE: My apologies, I'm getting hand signals from the back that's changed, so I'll move on to the next one, a written submission from Sheila Marchant, as outlined in CMD 18-H2.47.

Are there any questions?
--- Off microphone / Sans microphone

MS MCGEE: The next written submission -- oh, my apologies.

MEMBER McEWAN: Again, this is a comment that has come up several times, and it reflects the relationship of AECL to CNL and to CNEA, and there's a moderately unflattering description of AECL in the letter. So I'm wondering if we could perhaps now use this as an opportunity to get some clarity around those relationships.

THE PRESIDENT: Come on right in. This is before dinner. I think it's going to be a good time to deal with this issue, which was raised by many, many intervenors.
MS QUINN: Thank you, Mr. President, and Commissioner members.

For the record my name is Shannon Quinn. I'm vice-president of Science, Technology and Commercial Oversight for Atomic Energy of Canada Limited.

The question was quite broad and spoke to, generally, the relationship between the organizations, so I'll start broadly, and then maybe focus in on some of the particular concerns of this intervenor.

In CNL's presentation this morning, as well as the presentation by CNSC Staff, both spoke to the distinction between the roles and responsibilities of the two organizations, and so I won't repeat it all here, but I'll just put some emphasis on what I think is most relevant in terms of the distinctions for the purposes of the licensing hearing.

So CNL is fully responsible for all of the day-to-day operations of AECL sites/facilities and all of the ongoing activities. They are also fully responsible for their staff and their employees.

AECL, for its part, remains the owner of the lands, facilities, and assets, as well as the liabilities, and our role is really twofold. One is to oversee that all of the contractual obligations that exist
between AECL and CNL under the GoCo contracts are fulfilled and that Canadians are realizing best value for money under those contractual relationships.

AECL also has, as a federal Crown corporation, has a mandate to enable nuclear science and technology on behalf of Canadians, as well as to discharge Canada's radioactive waste responsibilities. That mandate we deliver not by self-performing, but rather by contracting with CNL to undertake those activities. So we in turn, then, oversee that our responsibilities are being delivered to good value under those contractual relationships.

So that is the distinction, and it's important in part because some of the questions being raised through the various interventions relate to which organization is rightly the licensee. And CNL, because they are that organization that has the full day-to-day responsibility to undertake all of the operations and to fulfill all of the licence obligations, they have the 2,800 people, who embody the skills, the experience, the expertise, and the qualifications necessary to safely and effectively operate those sites, are appropriately the licensee.

But maybe now I'll just turn to some of
the specific concerns raised by this intervenor, which, if I understand it correctly, relate very much to the findings of the Auditor General's special examination of Atomic Energy of Canada Limited.

So as a federal Crown corporation, we are subject to a special examination by the OAG at least every 10 years, and this, the most recent of those examinations, was completed in 2017. So I would start by saying that the scope of that particular special examination focused really on two aspects, those being corporate governance, as well as contractual management practices.

In both of those two areas, the OAG specifically found that AECL had the processes and the systems in place to deliver on those responsibilities. In fact, there was only one significant deficiency found through that special examination, and it related to governor-in-council appointments. The OAG specifically acknowledged that these appointments are outside of the control of AECL.

So I would say overall, then, that AECL was pleased that the OAG found that, even though we were only approximately one year into our new role as an oversight organization, that we had already established the systems and processes that would be necessary to meet the
criteria set out for that special examination.

THE PRESIDENT:  The argument they make here is: without a CEO, how can you oversee anything? I'm paraphrasing. What do you say?

MS QUINN:  So what I would say is that we do have a CEO, first off, and I would make clear the fact that at no time since the change in the model and the full implementation of the GoCo contractual relationship has AECL been without highly qualified and competent leadership at all levels of the organization.

And I would specifically point out that in February 2017, which was just after the period of the examination undertaken by the Auditor General, that there was an appointment of a president and CEO, Mr. Richard Sexton, and following that, later in 2017 there were appointments of the chair of our board and additional board members.

THE PRESIDENT:  I think this is a good time for us to take a break. I hope you'll be around for the next couple of days because I think this will come up many more times.

So thank you. We're going to break for dinner and we'll reconvene at 6:30 p.m.
--- Upon recessing at 5:38 p.m. /
   Suspension à 17 h 38
--- Upon resuming at 6:33 p.m. /
   Reprise à 18 h 33

THE PRESIDENT: Okay, we are back, and I understand, CNL, you wanted to answer one of the questions that was posed.

MR. LESINSKI: Yes. Mark Lesinski for the record. Thank you, Mr. Chairman.

There was a questioned asked earlier on about the makeup of our site on how many women we have at CNL or CRL, so I just wanted to put some numbers out there to answer that question.

First of all, in 2011, at the beginning of our licensing period, 28 percent of our staff at CNL were women. Throughout, then, the licensing period, to 2015, when we had another filing, we grew to 30 percent, so a 2 percent increase over that period of time. And a large proportion of that we actually are above the norm in professional areas, like scientists and engineers.

So if you look at this front table here, we're kind of indicative of the site, one out of three. We're getting close to that number now, and we continue to
Larkin made a good point: that across the nuclear industry it's about 20 percent. So we're above that norm.

And then I heard a question, too, about when you look at all the rest of industry, what's the distribution, and that's at about 31.5 percent.

So we're a little bit below the rest of industry, but well above the norm for the nuclear industry.

THE PRESIDENT: Okay, thank you. Thank you for that.

So I'd like now to move to the next submission, which is an oral presentation, by the Concerned Citizens of Renfrew Country and Area as outlined in CMD 18-H2.8 and CMD 18-H2.8A. I understand that Dr. Hendrickson will make the presentation.

The floor is yours.

CMD 18-H2.8/H2.8A

Presentation by the

Concerned Citizens of Renfrew County and Area

DR. HENDRICKSON: Thank you.

For the record I am Ole Hendrickson, with
Concerned Citizens of Renfrew County and Area. With me are Joe Castrilli and Rizwan Khan of the Canadian Environmental Law Association. They're available to answer questions.

First, I'd like to acknowledge that the CNSC has already acted on some of the recommendations in our submission, that a revised CMD should have an expanded section on proposed licence changes that documents and explains licence changes, and that there should be some description of the standard licence conditions for Class I nuclear facilities that have been introduced into the new licence.

Also, I'd like to say that we're pleased with the pilot project to include a submission to CNSC online, and we strongly recommend that continue to be done.

There are seven decades of accumulation of waste on CRL. I'm going to skip through this pretty quickly, but I think it's important for people to know that research and development meant in the early days of CRL development of nuclear weapons. That's a well-known fact. It's on the CNSC website. But that creates a wide variety of long-lived activation and fission products that are very difficult to manage, and the NRX accident in 1952 contributed to that legacy of over a half-a-million cubic metres of waste. Just for scale, that's equivalent to
about 4,500 tractor trailer cargo loads.

The estimates to clean up CRL vary a lot, but the $7.6 billion is from AECL's "2013 Basis of Cost Estimate", which is one of the documents referenced in the licence application, and I believe in the handbook as well.

I'll just briefly say that this hasn't been ignored, that there's been a nuclear legacy liabilities program, but that operated for about 10 years, and then when the GoCo model was implemented in September 2015 it was terminated, after spending about $1.22 billion.

We just got this "Basis of Cost Estimate" document from AECL through access to information. It's heavily redacted, but there is this table, which gives you a little more detail on the $7.6-billion liability which is on the books of the Government of Canada at the Chalk River Labs.

This is also from that "Basis of Cost Estimate" document. It's 10 of the plumes at the Chalk River site that are contaminating groundwater. You'll notice the inset map, with what they call they active -- we used to call the active area there, the two plumes from the NRX and the NRU fuel bay, and you'll notice 4, 5, 6, 7 are around Waste Management Area A, very close to where the NSDF would be, and plume 3 is from Waste Management Area B.
There are two reactor cores buried in Waste Management Area B and one reactor core from the '52 meltdown in Waste Management Area A.

The Government of Canada has greatly increased the amount of money going into decommissioning and waste management for Chalk River. In the past two federal budgets there's over $500 million in each. So if you multiply that times the 10-year proposed licence period, we're talking about a $5-billion expenditure from the taxpayers of the Government of Canada. That's not all for Chalk River, some of it's for the other CNL sites, but this is a lot of money and it's a lot to expect to spend this without having opportunities for the public to intervene and talk about things like the NSDF, which, as we know, is out of scope for this particular hearing.

However, there are concerns about what CNL would propose to do in this 10-year licence, such as the bulk demolition approach, which hasn't been discussed here, or moving away from environmental remediation of Waste Management Area C, for example, to in C to abandonment essentially of the waste in that waste management area.

These are things that I think the public should have an opportunity to talk about, as well as the plan of CNL to consolidate all the federal wastes from
all -- from Whiteshell, Gentilly, Douglas Point at Chalk River, including moving all the high-level waste fuel rods that are currently at these sites to Chalk River even though there's no appropriate facility at present for managing those kinds of waste, either storing them or disposing of them.

And of course disposal of high-level waste is not feasible at Chalk River because of the highly fractured nature of the bedrock and the seismically active faults that run down the Ottawa River very close to where we are right now.

So these are new activities that the licence apparently would allow, but there hasn't been any real public discussion or analysis opportunity.

That's just the map showing where some of those CNL-run facilities are.

The waste management provisions that would guide this type of activity are really out of date. The CNSC document P-290 is over 10 years old now. There's been a lot of IAEA guidance and advice that's really pertinent to managing waste that simply hasn't been adopted, either by CNSC or perhaps by the Government of Canada, because it has a major policy role for managing these types of very long-lived waste that will be around for thousands to
billions of years.

And I just took a table from -- I know this is from the NSDF EIS, but this is their waste inventory. So these are the kinds of wastes that are currently the responsibility of the Government of Canada via AECL, and you can see that many of them have half lives of thousands to millions to billions of years, so this is not a trivial matter.

And we're very concerned about the proposed demonstration facility for a small modular reactor. We know that three of the consortium members are very interested in this. But again this means more waste at the Chalk River site and a really rigorous and publicly accessible program for dealing with it is essential if there's going to be any sort of social licence to go in this direction.

So our conclusion is that we don't have adequate provision for protection of environment and health at Chalk River at present because of the current approach to nuclear waste management. I know a lot of you want to get into the watering down of the licensing conditions and the deletion of the compliance verification criteria. This is an important topic, and so I really wanted to leave a little time to explain our concerns about that in my
remaining three minutes.

And just there is an opportunity. I don't think everything should be on the CNSC. The Government of Canada itself could do something called strategic impact assessment and look more broadly and holistically about how its nuclear waste can be managed more safely.

In terms of the proposed changes to the licence, I would direct you to page 28 of CMD 18-H2.8, where I discuss some of the provisions. And since we're focusing on waste here, I'll just say that some of the criteria that would be deleted are the requirement to document the characteristics of all radioactive and hazardous waste produced at CRL or accepted from outside clients, to obtain appropriate authorization of waste management activities, to minimize the production of radioactive waste, to maintain accurate records of radioactive waste, to prevent undetected leaks of radioactive waste, and to ensure as far as possible that radioactive waste cannot escape from control or containment.

These are all in the current CRL handbook. Are they in the proposed new CRL handbook? No, they are not.

What is in the proposed new CRL handbook?
Well, if we go to page 28 of the supplementary CMD prepared by CNSC Staff, they talk about the draft Licence Condition Handbook says that requirements for handling processing, storage and safeguarding waste are all covered under CSA Standard N292.3. Well, I was able to go to the CNSC library and read CSA Standard N292.3. And I put a little appendix in, which, if you turn to page 44 of the CMD 18-H2.A, I talk about what I found in CSA Standard N292.3. It's on page 44.

N292.3 explicitly excludes issues related to radioactive waste disposal, so nothing about radioactive waste disposal is discussed in that, it has no reference to control or containment of wastes, no reference to ensuring that no leak or escape of waste can occur, no reference to minimizing waste, no reference to adequate waste recordkeeping, and it lacks the text the application of the standard is mandatory when referenced as a requirement in a CNSC licence, even though that is present in some of the other CSA standards.

So in no way, in my opinion and the opinion of our group, does this CSA Standard N292.3, which replaced what's in the current handbook -- so management of low- and intermediate-level radioactive waste is a huge gap of major concern to our group, and I think many other
people who are attending this hearing, and it's one that we think justifies restoring and strengthening conditions that are currently found in both the licence and the CRL Handbook.

Thank you.

**THE PRESIDENT:** Thank you. I'm not sure we could follow all the argument back and forth. Because if we're going to go in the particular example you gave about waste, I want to hear from staff. Is he right?

**MS TADROS:** Haidy Tadros, for the record, sir.

What we’ve laid out in our supplemental is the proposed licence condition that will be captured with regard to the requirements for a waste management program, and that, correctly as identified, is on page 28 of staff's supplemental CMD, and the compliance verification criteria that is currently being proposed to be included in the Licence Conditions Handbook as the criteria by which CNSC staff will conduct compliance verification activities on.

Rightly noted, a lot of the CSA clauses that are included in 292 are found in the Licence Conditions Handbook with the compliance verification criteria identified, so what I’d like to do is give an overall perspective of the CSA standard, some of the words
that are currently found in the existing licence condition, and what is found in the clause of the CSA Standard N292.3, I'd like to pass the mic to Ms Karine Glenn in Ottawa. She is our waste management specialist, and she can describe what CSA standard not just 292 includes, but the other standards that are also referenced in the Licence Conditions Handbook.

**MS GLENN:** Karine Glenn, for the record. I'm the Director of the Waste and Decommissioning Division at the CNSC. I am also the Vice Chair of the CSA N292 technical committee, so CNSC is involved in the development of those standards and plays an active role in the leadership of that committee.

The intervenors say that 292.3 doesn't specifically reference waste minimization and characterization. If those aspects of waste management are covered under CSA Standard N292.0, which is an overarching standard which applies by reference to the other standards of the suite of the waste management standards that the CSA has put together, so 292.3 incorporates by reference the appropriate sections of 292.0 and those clauses as applicable. Especially those talking about waste minimization, waste characterization, and recordkeeping are found in 292.0.
With respect to recordkeeping, the CNSC regulations also stipulate recordkeeping requirements.

I want to talk briefly about P-290. While it is an older document, it elaborates some very high-level principles that are consistent with the Government of Canada's policy framework for radioactive waste. Those principles are still applicable today. They're motherhood statements, if you'd like, with respect to ensuring the long-term impacts of waste don't exceed the allowable environmental and regulatory requirements in place today, that there's no transboundary issues, that the generation of radioactive waste is minimized to the extent practicable. Those are all consistent with what we find in the CSA standards as well.

When developing regulatory documents at the CNSC, we try to minimize duplications of -- if there's already a CSA standard that addresses it, rather than duplicating the work that's already been done as part of that standard, if it's appropriate we will just reference the standard rather than duplicate those requirements in our own documents.

The information found in P290 that the intervenor referred to is still current, it's still applicable. We will be rebranding that information under a
new REGDOC, which is 2.11.1, that will be published this
spring, but the statements that are found in those will
actually not be modified.

**THE PRESIDENT:** Why is 292.0 not in the
table, not made reference of in the current LCH?

**MS TADROS:** Haidy Tadros, for the record, sir.

**MS GLENN:** It's currently referenced as
guidance. Some of the other intervenors have pointed that
out because it is, as I mentioned, incorporated through
reference by -- the CVC reference of 292.3, for instance,
it is binding, those clauses that are referenced are
binding, but we do understand that it would be clearer if
we moved that standard into the CVC portion of the LCH, and
we will take that recommendation into consideration.

**THE PRESIDENT:** Does that answer your
question?

**DR. HENDRICKSON:** In part. I guess for
somebody like me it just kind of raises the question why do
we have -- what is the purpose of a licence if all the
documents are some place else, and the licence just repeats
over and over again the phrase, "shall implement and
maintain a program", a program for waste management, a
program for training, a program for this, a program for
that? What is wrong with having more clarity and more detail in a licence so the licensee, the regulator, the inspector, the public can see what it is that's needed to be done to be in compliance and to be safe?

**THE PRESIDENT:** I'll start with CNSC, with staff, because we heard previously from OPG and from CNL that they like it because it gives them more clarity because, this is nuclear, you're going to get into some gory details.

Staff, go ahead.

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

Just a few things to clarify. The Licence Conditions Handbook, by referencing regulatory documents and CSA standards, all those documents are readily available. The challenge we have with the current Licence Conditions Handbook is in fact over time we've kept pulling certain words from different standards or documents and putting them either explicitly in the LCH or in the licence condition. The end effect with that is it starts to get quite large, and the problem is you can never capture everything that's already in the regulatory document. Then, where you start running into confusion, and I believe one of the intervenors earlier mentioned it, is that people
now start judging: well, if it's not really written explicitly in a licensing condition, then is it applicable, is the regulatory requirement applicable?

This is why we spent a fair amount of time on the supplemental, to clearly lay out that it's the entire document, the licence and the Licence Conditions Handbook together, that form what we deal with when we're trying to apply regulatory compliance. The LCH lays out the compliance verification criteria that we will apply, but I want to reiterate, the regulatory documents and the CSA standards are available, in fact, we've made sure of that to make sure that people can read them, so it's not that anything gets lost, it's more a matter of -- one thing I think that I can mention, even my own experience, I've now gone through seven or eight licence renewal hearings on different files, and I found this particular licence a very challenging licence to try to apply and enforce as I became director of the division, because when I was reading the text I almost had to ask four or five people to understand why certain words were there and why other words weren't there. This is where you get into these variations of interpretation, and that in turn leads to lack of clarity, so that's why we've really worked hard at trying to improve this.
The other thing it's very, very important to put forward is when we say we haven't taken any of the requirements out of what's in the LCH we really mean that. The LCH is a draft. It's something we've put forward so we can show here what we've been doing, but if someone points out something that we've missed, we certainly will put it in there, because the whole idea is clarity of requirements, clarity of expectations.

A lot of the things that Mr. Hendrickson mentioned clearly are fundamentals to waste management, and there's certainly no intention of losing any of those basic fundamental principles that we know and that we expect in waste management. Ms Glenn already did clarify that in fact we haven't lost anything. Again, I want to reiterate it's a draft, it's a draft Licence Conditions Handbook, and if we do identify something that we've missed through the process of doing what, as you can see, is a fairly substantial exercise, we'll put it in there.

We're not trying to remove any requirements. That's not the intention of what we're doing.

THE PRESIDENT: CNL?

MR. COX: David Cox, for the record.

At risk of repeating what I said earlier,
I'll say it a little differently, that we've reviewed the draft licence and Licence Conditions Handbook, including the reference codes, standards and REGDOCS, and do not believe that it constitutes a reduction in the requirements that need to be met, in fact it provides needed clarity.

Two points. There's a confusion I see in some of the interventions around quantity versus quality or, similarly, repetition versus clarity. I think what we're looking for is clarity in the requirements, and the way that's being achieved is by single reference to the code, standard or REGDOC that is applicable as opposed to paraphrasing some of those requirements, which was the approach previously, in some of the earlier versions of the Licence Conditions Handbook.

THE PRESIDENT: Thank you.

Questions? Who wants to start?

MEMBER SOLIMAN: Thank you. Yes.

THE PRESIDENT: Go ahead, Dr. Soliman.

MEMBER SOLIMAN: My question is to the intervenor. On page 41, recommendation number 22, you said that CSA Standard 292.3 is not accessible, and it looks like on page 44 it was accessible and you get one full page from that CSA. Does that mean some of your recommendations are not valid?
DR. HENDRICKSON: In order to access 292.3, I made a special trip to 280 Slater, to the CNSC library. You have to call ahead of time. They were kind enough to allow me to go online and actually extract phrases from that standard search and extract, which is not possible for the public to do.

I've tried to actually access the CSA standards, the nuclear standards, I just tried a few minutes ago actually. There's sort of a webpage on the CNSC website, which would in theory lead you to those standards, but I was unable to access any of the standards. I just wanted to check and see if that facility is operational. It may be, but it's not easy to use.

THE PRESIDENT: Okay. This would be a concern, if that is true, so I'd like some clarity on this. As you know, we are very active, staff is very active with the CSA, in fact, I understand you contribute a lot of funds into that, so what happened here, why is it not accessible?

MS TADROS: Haidy Tadros, for the record. You are correct, sir. We have Mr. Brian Torrie in Ottawa, who actually sits on the Canadian Standards Association committee, when they're deliberating. Perhaps, he can give you a feel for our involvement in the
CSA standards, but more importantly, and speaking to the intervenor's concerns about the CSA documents being available from our website, I think Brian can also provide some clarity there.

**MR. TORRIE:** Hello. It's Brian Torrie. I'm also the Director General of Regulatory Policy Directorate here at CNSC, and I sit on the strategic steering committee that oversees development of the CSA standards.

I'm not sure why the intervenor had trouble accessing the site. It is a fairly simple process normally. I actually did it earlier today myself, because I thought this issue might come up. I enrolled with another email, I already had an account, just to see how it worked, and it took me about five minutes and I was able to access the site.

What the view access normally allows is you can view any of the standards on screen, you can search any of the standards on screen, you could zoom in, you just can't download them because they're copyrighted material. However, if you wanted to quote them or reference them, there's a form that you can fill out and the CSA group then would authorize you to reference the standards.

The CNSC pays a fee of about $20,000 a
year to allow that public view access, and it's part of allowing access to our broader regulatory framework.

In addition to that, the committee that developed the standards are essentially open to the public. They have a varied participation, it includes industry, members of the public, academics, et cetera, so there's opportunities there to participate, it's just a question if you have expertise and the time to volunteer.

Those are just a couple of ways that you can get involved in the CSA process.

THE PRESIDENT: I don't know why you couldn't -- you should try, and if you can't, you heard the name, Brian Torrie --

--- Laughter / Rires

DR. HENDRICKSON: (Off microphone)

THE PRESIDENT: There may be a technology glitch here, I don't know. I will have to actually test drive this and see if you can and if you can't get a hold of this. We'll resolve this, because we pay for it to be resolved.

MR. DEMETER: Can I break the fourth wall for a sec here?

Prior to this meeting, to prepare I test drove the interface. What I found awkward with test
driving the interface is, one, you have to register, because you can become a member, you can put comments and you can deal with the standards, so you register, you have to give some personal information, which is an issue, like your title, your company, and your email address, and then I was able to get all the books, all the standards.

The interface is a single page. There's no search elements. You can go from page to page to page. You can't print or copy, but you can see the whole standard. I did test drive that because I wanted to see how awkward it was for a member of the public to get access to it, and perhaps one of the recommendations is to find a way to make that a little bit more streamlined. But it is accessible. I did it two days ago.

**THE PRESIDENT:** Okay. We've got to move. Questions? Dr. McEwan.

**MEMBER McEWAN:** Thank you.

Again, thanks for the submission. I found it very helpful.

In several places in your submission you talk about the length of the proposed licence, and you've obviously got concerns about it, a 10-year licence, as it is proposed. Could you give a synopsis of the reasons why you feel that would not be the most appropriate way for us
to go?

DR. HENDRICKSON: Yes. Certainly. Thank you for that question I did anticipate.

One thing is that I think there have been some real positive changes as a result of this licensing hearing. For example, I talked about the pilot project to put all the submissions online, we've asked for that in the past, but more fundamentally there are a lot of changes in the works at the CRL site, with maybe upwards of 100 buildings coming down.

I know we heard from Mr. Lesinski that they're sort of starting on the easier ones and getting their staff more familiar with the decommissioning process, but they're going to have to tackle some very difficult waste management and decommissioning challenges, and I think this hearing actually demonstrates the value of having not just the public, but we heard a very powerful presentation from the Algonquins of Ontario, it's not just us but it's the Commission Members as well, to have an opportunity to interact with the public on a more regular basis and not wait 10 years, or it just becomes a sort of two-way interaction between CNSC staff and the licensee.

The public, I think we're seeing the public concern and awareness of the problems there is
growing, so you want to give the public, and first nations I might add, an opportunity to really participate in a forum like this, and 10 years is way too long, there will be major changes, and we do have a relatively new site operator as well.

**MEMBER McEWAN:** If you were going for -- recognizing that there is a considerable amount of work to be done and to be planned, how long a licence would you feel would be reasonable? Recognizing that we have the annual report, how long would you feel was reasonable to give the operator a chance to actually get some work done and provide some clarity on likely outcomes?

**DR. HENDRICKSON:** We're in the tail end of a 17-month licence, and we've had a fair bit of interaction about that period of time, but I think three years, because we know the GoCo model will be up for review in 2021, and the Government of Canada, and AECL's review of the performance of the CNEA consortium would profitably be informed by this kind of discussion.

Perhaps we'll be really happy, you know, as a result of this interaction that we're having today there will be a lot of positive changes, and hopefully not a nuclear waste mound, but, yeah, three years, particularly because of that contract review period.
MEMBER McEWAN: Thank you.

THE PRESIDENT: Staff and CNL, and maybe AECL, you said the GoCo will be under review. That wasn't my understanding. There may be another contractor, but the model itself will continue. That's the way I understood the model, so maybe we should ask AECL and the CNL on this.

MS QUINN: Thank you. My name is Shannon Quinn, for the record.

With respect to your question around the GoCo model, you are correct in saying that the model itself is not up for review.

What I understood from Dr. Hendrickson's intervention was that he is suggesting that the contract has an initial six-year term and then a possibility of a four-year extension, so I believe he was referring to the end of the initial six-year term, at which point it will be at AECL's discretion in order to exercise the option for the four-year extension or not.

Dr. Hendrickson is right that AECL, as part of its job, does review the performance of CNL, we do it on an annual basis, and indeed there will be a determination and a review of the totality of that performance as we approach that option period.

Where I would see it differently is that
there is no reason why the licence would be aligned with any kind of decisions around a contractor or not. The GoCo model itself was deliberately set up such that CNL would be an enduring entity. What is meant by that is that contractors can come and go, but CNL will remain. CNL will remain a legal entity, it will remain the employer, it will remain the licence holder.

There are provisions in the GoCo contractual arrangement to see that CNL will continue to be able to deliver on all of its obligations, including remaining in compliance with all of its licence requirements, whether or not the contractor changes or if and when the contractor would change, so by virtue of that I see no relationship, really, between the term of the licence and any kind of terms of -- or sort of durations of the contract because it was simply designed that CNL, as a licensee, would always be able to continue irrespective of any changes in contractor, whether it be at the end of six years or at the end of 10 years, or otherwise, based on other decisions and clauses under the GoCo provisions.

**THE PRESIDENT:** So just for further clarity, just take us through a scenario in which, in three years, you decide you want to change contractor. What would happen?
What would happen the day you decided to do? The sky will fall?

I'm trying to understand what's the doomsday scenario here that everybody's worried about.

**MS QUINN:** Shannon Quinn, for the record. In no scenario do I see doomsday.

So there are a variety of scenarios. As AECL, what we anticipate is that either at the end of six years or at the end of the possible full year -- full 10-year contract term that AECL will decide to undertake a transparent and competitive process to issue a new contract and, of course, it's possible that the existing contractors would compete in that process.

And we have no way of pre-judging who would win that type of a competitive process, but we expect that the scenario will be that it will be done in a fashion to see a new contractor being determined such that there would be a very well-planned and orderly transition between contractors should that be the result of the competitive process.

That said, I've already made reference to the fact that, of course, as in any major contractual relationship, there are termination provisions in that contract. That's indeed the case here, so it is possible,
although I would say very unlikely, that the contract would end at a time that is neither at that six-year nor 10-year period and that in a scenario where it ends and there's not been an opportunity to complete an open and competitive process, we are in a scenario there where the shares of CNL would then very likely come back and be held by a government entity.

It could be AECL, but it's not necessarily that. There are other government entities that are specifically set up to hold shares.

CDEV is an example of one of those entities.

But I want to be clear that even in that scenario, which has been contemplated as a possibility, CNL will continue with all of the necessary skills, expertise, qualifications and certifications that would be needed in order to remain in compliance with its licences and to be able to deliver the work that AECL expects it to do.

**THE PRESIDENT:** Thank you.

CNL, you want to add anything?

**MR. COX:** Thank you. David Cox, for the record.

So I'll speak to a few points of clarification around, I'll say, the characteristics of CNL
as the enduring entity and the licensee, I think, which is very important and central to this discussion.

One of the foundations upon which we've based our proposal for a 10-year licence is the performance we've demonstrated through the current licence period.

The -- that performance comes from, really, two areas of strength. It's the 2,800 people at Chalk River or the 3,400 people make up CNL overall, the skills and experience, the training, the knowledge that they possess, so it's the people.

But the second element is the processes. We have strong processes that are used for ensuring we conduct our activities in compliance with the licence and all of the requirements that are entailed there, and our strong processes are built on the decades of experience that CNL or formerly AECL has existed under. And more recently, we folded on top of that experience exposure to international best practices that come through the connections under the GoCo model, those connections coming from our shareholder organization, or CNEA.

But independent of whether the shareholders change, CNL remains. CNL will remain as the licensee and the enduring entity possessing the skills, knowledge and the programs and processes that are necessary
to maintain compliance.

So that's an elaboration on an important element of the discussion, which Dr. Quinn is referring to in terms of resiliency in terms of change -- change-over, of shareholder changes, okay.

The other -- I'd like to make the case, though, that 10 years is appropriate for a number of reasons. And you asked about the scenario in which the contract might change.

And if we look at the scenario where CNEA continues to operate through the full 10 years of the contract, that would expire in about seven and a half years from now, so in 2025.

At that time, as Dr. Quinn mentioned, there would be a bidding process, select a new contractor. A number of elements would come into play. But CNL would remain as the licensee and the enduring entity throughout that process, but what would the contractor do, I think, was the question, what's the scenario or what would unfold.

And that would be the new contractor if, in fact, it's a new contractor, would come in and evaluate, develop their own long-term plan and, within a year and a half of assuming the contract, would be in the position where they would need to make a licence application for the
next period of time.

And I think that's a reasonable and appropriate timeline to ensure that a new contractor could come in and execute the long-term planning, evaluate the lay of the land, the horizon, and bring their vision to the new contract and then have a year like we've had.

You need to apply for a new licence a year ahead of the expiry of the current one, so I think that's -- from a business planning perspective, I think it's an appropriate scenario that provides certainty and it allows a new contractor to lay out their plans and articulate what that plan would be for the next licence period.

I'll also note that previous licences for Chalk River have been strongly influenced by the NRU reactor. There was, in the past, a lot of uncertainty around the necessary -- completion of the necessary upgrades to NRU in order to maintain, you know, safe operations, and so our past licence durations were strongly affected by that and the most recent one was by the introduction of the new GoCo model altogether.

But as Dr. Quinn has mentioned, there's not an anticipated change to go the GoCo arrangement. It's only change to the shareholder if, indeed, that takes
place.

So a 10-year licence provides certainty for long-term business planning. It provides for appropriate transition from one shareholder to the next and, in the middle of that, CNL remains the qualified and experienced licensee with the people and the processes to ensure the compliance is maintained in place throughout the turnover period.

THE PRESIDENT: I think we have two follow-up.

Dr. Soliman?

MEMBER SOLIMAN: It seem to me being that CNL and the contractor are forming one management team to run the company, so what is the division of responsibility between the two and how you settle disputes if it happen between the two organizations?

There is a dispute, how you are going to resolve that? What is the mechanism?

MR. LESINSKI: Mark Lesinski, for the record. Thank you for that question.

Well, first of all, it's not that there are two different organizations. In fact, the way the model works is as the executives that are being fed into CNL from the parent companies with the appropriate
expertise to match up with what our missions are and what the particular things that we're going after, as I mentioned during my opening comments, when those individuals come to the site and are seconded into CNL, they leave their other company's hat behind and put the CNL hat on nice and tight. And that team then that's formed -- which is what we have right now.

We have long-term CNL executives that are on our team as well as we have individuals that have come from other -- the parent companies that come in, and that's -- we make them a team that works together regardless of which is their parent company or where they came from.

So that's a real important aspect to think about that.

However, behind that, when you look at it from a licensing standpoint, we have a succession plan that has in place individuals that can back up every one of us to ensure that all of those capabilities are there if, for whatever reason, all of the people from the parent companies disappear overnight.

We still have the capabilities and we can still maintain the licence compliance and the safety of the site.
THE PRESIDENT: Thank you.

MEMBER SOLIMAN: So what you are saying, basically, is that it is one unified group management and there will be no dispute at all between the two organizations?

MR. LESINSKI: Right. Mark Lesinski, for the record.

There is only one CNL organization.

MEMBER SOLIMAN: Okay.

THE PRESIDENT: I assume there's also the mother ship, AECL and the government, who put some long-term objective on the long-term plan. So there's -- there's another player here if things don't work, mother can come and take it all back.

MR. LESINSKI: Do you want me to respond, or...?

THE PRESIDENT: I'm trying to simplify this complicated concept.

MR. LESINSKI: Right, right. So Mark Lesinski, for the record.

Absolutely. AECL is the owner, yes, but they are overseeing us as well, absolutely, to make sure that that team there is there is fulfilling the needs for the site, are executing the work that is put in front of us
each year on an annual plan of work that we establish, and we're graded upon that.

And they're a very demanding customer, which is appropriate for the Canadian taxpayer.

**THE PRESIDENT:** Dr. McEwan.

**MEMBER McEWAN:** I'm going to pass. Thank you.

**MEMBER SEELEY:** Maybe just on this theme of a change in contractor.

So in the event of a change in contractor, presumably AECL would have some provisions for an appropriate transition of senior management and the executive team, so we wouldn't want to see a change in ownership in the contract and then you lose all of your executive and senior management from CNL. So there must be -- are there provisions for that transition?

**MS QUINN:** Shannon Quinn, for the record.

Indeed there are provisions in the GoCo contracts to provide for, as you say, a smooth transition, but maybe I'll bring a little bit more specificity to that in the sense that -- so I think part of where, I guess, some of the confusion comes in is that when we talk about the changeover in contract and potentially change-out of those senior executives, in the context of the GoCo
arrangements, the term for those people are key personnel. Currently, there are eight. So when you put eight people in the context of 2,800 people, I think it gives people a better sense of how it is that you could have -- that the CNEA organization disappear overnight and still be able to have a continuity of operations, continuity of safe operations, because the vast majority of those people and, indeed, all of the processes and procedures that would see the site being operated safely on a day-to-day basis would, in effect, still be there.

What you would have is a change-out at the senior executive level.

So in the scenario specifically that you were contemplating where it is a planned and orderly transition, there are provisions in the COGO contract that will see that the exiting leadership does cooperate in that particular transition.

But in answering the question, I would also point out the fact that we've already been through this one time.

So back in September of 2015 when the GoCo model was first put into effect, we saw this very process play out for the first time.

So what you saw at that moment was a
change in those senior leadership positions and then what we had was continued safe operations.

What that change-out meant, in effect, really, was that some of the strategic directions of the organization were rethought, and that was put in the public domain in the form of CNL's 10-year plan.

And some of the priorities and directions of the Government of Canada, of course, reflect some of that and are put out in the public domain via AECL's corporate plan, as it's our duty as a Federal Crown Corporation.

And so maybe I'll just build on one of the points that Mr. Cox was making around some of the possible benefits, in fact, of having the expiry of a licence be a little bit offset from any change in GoCo contractor that would happen.

So in fact, this is what many of us lived back in the fall of 2015 where you saw the GoCo model being put in effect, a switch-over of the senior leadership and then the licence, of course, just carried on.

There was no hearing at that particular time, and then there was a bit of a period where the new leadership could come in, develop their plans and then, at an appropriate time, they could really turn their
attentions to a relicensing process which, for all organizations involved, is a very, very significant effort, an effort that, of course, has value, but an effort nonetheless, and could be prepared to come and present to the public and the Commission and all other interested parties actually what their vision would be for the long term, which is one of the things, I think, that is of interest and would not be possible if the new management team was coming in fresh just as brand new leaders in an organization.

THE PRESIDENT: Thank you.

Question. Dr. Demeter?

MEMBER DEMETER: Thank you.

This is a question for CNSC Staff, just to give me some assurance.

So the intervenor talked about the Nuclear Legacy Liabilities Program being cancelled.

Now, do I interpret that as it's been transitioned to something else? Has something else picked up the liability that that program was meant to carry?

I see by your intervention -- by the CNSC CMD that the nuclear liability insurance components have all been met. And how does this fit into it, and has it been transitioned to something else?
MS TADROS: Thank you for the question. Haidy Tadros, for the record.

So I'll ask Mr. Ron Stenson with the Nuclear Laboratories and Research Reactors Division to explain a little bit about what happened to the nuclear liabilities program and where it's at right now.

MR. STENSON: Thank you. Ron Stenson, for the record.

CNL will be able to qualify this with better detail, but functionally, the -- all of the responsibilities, the requirements, the liabilities and the management of those liabilities was absorbed into the ongoing waste management and decommissioning programs under CNL so that the actual activities themselves, the liabilities, were not lost. They were assumed with the -- through the GoCo contracting by the management company.

So they could provide better details on that, but staff is satisfied that the ongoing programs and then the future direction of any -- the disposition, the speed at which they may choose or the priorities they may want to set were affected by the new direction, but all of those things that were covered under the old liability program were absorbed into the new waste management and decommissioning program.
And they could talk about the funding and so on as well, I think.

**MR. COX:** David Cox, for the record.

I'll ask Kurt Kehler to provide some additional information about the Nuclear Legacy Liability Program in its current form and, if necessary, Dr. Quinn from AECL may also be able to provide additional insight from AECL's perspective on the programs.

**MR. KEHLER:** Kurt Kehler, for the record, Vice-President of Decommissioning and Waste Management at CNL.

The comments Ron made are true. The program continues. It's just not tagged NLLP any more, the National Nuclear Liability Program.

We track it within decommissioning and waste management as an ongoing program, track the liability and, as part of discussion earlier today with the comprehensive preliminary decommissioning plan being revised, you know, the number associated will be -- the estimate is what backs up that comprehensive preliminary decommissioning plan and also the guarantee.

And so on our ongoing basis, we track it like we would do almost any project baseline.

**THE PRESIDENT:** So to the intervenor, now
that you've heard this explanation, can you maybe explain, what do you mean by -- what did you mean by NLLP program cancelled?

Because I thought it was just transferred, so what am I missing here?

**DR. HENDRICKSON:** Well, there's been -- well, I think it's semantics whether you say "cancelled" or "transferred", but it's clear that Natural Resources Canada no longer has a Nuclear Legacy Liabilities Program. It no longer gets Parliamentary funding and administers that program itself. That ceased in September 2015.

Now the Parliamentary appropriations for decommissioning and waste management go directly through AECL, and most of them go to CNL. I think this has been sort of discussed here already.

But there is, nonetheless, a concern that there have been some fairly major changes as a result of that transition.

The particular, the comprehensive preliminary decommissioning plan that Mr. Kehler just mentioned and that Nhan Tran mentioned earlier in his CNSC Staff presentation is being radically changed, and there's a new CPDP, for short, that's been submitted as of December 12th which includes, for example, the proposed near surface
disposal facility.

And the -- there were activities under the former decommissioning plan that was generated by the Nuclear Legacy Liabilities Program such as development of an intermediate level waste repository that have essentially ceased, as far as we can tell.

There was to have been an initiated siting process for intermediate level waste, which is some of our greatest concern, that hasn't even -- we haven't heard anything about that today, and nothing in the CMDs, either.

So there seemed to be a major new shift towards an engineered containment plan which initially was to take intermediate as well as low level waste. Now it's only low level waste.

We're wondering, well, what happens to the intermediate level waste. What happened to the program to deal with intermediate level waste that was in the former comprehensive preliminary decommissioning plan.

So these are not trivial changes. These are major changes.

**THE PRESIDENT:** No. But with respect, they acknowledged they have to update their preliminary decommissioning plan.

But I just want to make sure that
everybody understands the liability responsibility exists. It did not disappear. It wasn't cancelled.

Okay. I just wanted that to be clear.

**DR. HENDRICKSON:** Well, we're still puzzled as to why the reference to nuclear legacy liabilities has simply been removed from the licence, that seems inappropriate. But more fundamentally the liability is still the responsibility of the taxpayers of Canada. There hasn't -- that would --

**THE PRESIDENT:** Okay. We heard this argument. We're going in circles. As long as there is somebody responsible, so it didn't disappear. That's all I'm trying to understand. The liability exist and somebody will take responsibility for it.

Dr. Quinn, you want to say something about that?

**DR. QUINN:** So, maybe just for clarity. What happened as part of the restructuring of AECL was a consolidation of Canada's responsibilities for radioactive waste. And so, at that time Canada's responsibilities under the NNLP which was previously administered by Natural Resources Canada, those responsibilities moved to AECL.

So, the Government of Canada fully retained all responsibility for all of the radioactive
waste, it just shifted from being administered by Natural Resources Canada to being administered by AECL, an agent of the Crown.

This is one example. There are other examples. So, the liabilities associated with Port Hope, they similarly at the same time were moved as part of this broad consolidation, the idea being that at that time under the new GoCo model AECL was purposefully rebuilt from the ground up as a small but highly qualified, competent organization to manage AECL's responsibilities, both with respect to enabling finance and technology, but also with respect to fully discharging Canada's radioactive waste responsibilities.

And so, AECL with that highly qualified and competent workforce was given full responsibility for overseeing all of those legacy liabilities and that is what we do.

And so, we do receive appropriation from the Government of Canada which then in turn go to CNL to pay for the costs of them doing the day-to-day work to discharge those liabilities.

One of the things that I would point out that's a bit of a nuance is, is that this liability which is currently estimated at $7.6-billion, it is booked on the
public accounts of Canada. The effect of that is to say that the Government of Canada has already fully set aside all of the funding required to fully remediate all of those liabilities. So, those monies and that financial hit has already been assumed by the Government of Canada and now AECL is contracting CNL to undertake the work to do all of the appropriate environmental remediations and to manage and, in some cases, dispose of those radioactive wastes.

THE PRESIDENT: Thank you.

Question? Question?

Mr. Seeley?

MEMBER SEELEY: Not to belabour the Licence Condition Handbook and clarifications of previous licence conditions versus what's in the new one, but I think we had a very good example of how it could be misinterpreted just by leaving out CSA 290, for example.

This is a question for CNSC. Is there some kind of comprehensive table that does a full summary of, here's the old Handbook and here's where you find it in existing standards, regs and such that we can give some confidence to the public that we are not deregulating and that, in fact, all those requirements are just prepared in a new form and a new format in the Licence Condition Handbook?
THE PRESIDENT: So, I'd like to piggyback on this. So, there is a supplementary that staff produced, CMD 18-H2.A, if there's a table in it that deals with the current LCH and the new?

I'm just wondering whether the intervenor had a chance to look at it and are you satisfied with the explanation?

DR. HENDRICKSON: Well, the supplementary compares the current licence and the proposed licence; the supplementary does not compare the current Handbook and the proposed Handbook.

There are literally hundreds of pages of compliance verification criteria in the current Handbook that are not in the proposed Handbook, many of which may be substituted by either internal Canadian Nuclear Laboratories' documents, to which we have no access at all, or CSA standards, and we discussed those, but to my knowledge there has been no detailed comparison to assure the public that the provisions in the current Handbook have not been lost and we're not experiencing something called deregulation.

THE PRESIDENT: You know, we are dealing with a theoretical thing, but in your submission you give an example of -- let me pick the first one you mentioned
was the management system, okay.

So, I'm trying to really understand if there was something missing, let's say in the management system as it's written here, and I'm looking at your intervention on page 4 and you quote the licence. And then, if you look at the supplementary, staff went through their interpretation of the new one.

What I'm trying to understand, if you had a chance to read it, are you happy with the suggestion that it's not changed really?

**DR. HENDRICKSON:** No, I wish I were, but no, I'm not, that's why I'm here is because -- well, for example, in that supplementary they actually extracted one of our comments and that specifically dealt with having a written safety policy which seemed like a very good idea and something that every one of those 2,800 employees at CNL could hold up and know what the written safety policy for the labs is. That's gone.

And they tried to say, oh no, this is -- there's some CSA standard or something that deals with this, but having a compliance verification criterion that says have a written safety policy seemed very important.

**THE PRESIDENT:** Staff?

**MS TADROS:** So, Haidy Tadros for the
We've discussed a lot with regards to what is there, what isn't there, what should be there. I think from CNSC staff's perspective, and Mr. Seeley you asked for a comprehensive table, the supplementary CMD with the table at the back was our attempt to show that based on what is currently found in the licence and the licence conditions of the Chalk River Laboratories site has been mapped to what is proposed as the new licence conditions according to the standard set of licence conditions that are found in every Class 1 facilities, uranium mines and mills.

So, the standardization of all licences across major facilities is a component that we are looking at here today. And then, from there we took all of the compliance verification criteria that currently exist within regulations, within CSA documents, within Reg Docs and within the licensee's programs and cited them as compliance verification criteria that are used by CNSC staff when they conduct compliance verification inspections, desk top reviews.

So, the point that is very important to make here is these documents are enforceable and these documents are used by the regulator and the licensee.

I understand the significance of
understanding these documents from the public's perspective, and I think Dr. Hendrickson has gone through an extensive exercise to just point out what I believe is some confusion as to what might be missing.

We are looking at how to bring forward the recommendations of potentially CSA standard N-292.0 as compliance verification, even though it is already a requirement by reference. So, we are looking at improvements in terms of what can we bring forward into the compliance verification criteria that are found in the LCH.

So, with that, I believe Mr. Ramzi Jammal wants to make some statements around the licence and Licence Condition Handbooks in case I've missed something.

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

I commend the intervenor for taking his time to really evaluate and request clarification. At the same time a discussion took place about the GoCo, the term of the licence. I'd like to remind everybody that we have the Act, we have regulations and the licence and the Licence Condition Handbook. The Act is the law.

In our supplementary CMD we clearly identify that every licensee must be in compliance with the Act and regulation, licence condition and Licence Condition
Handbook, they are the regulatory instrument with respect to complementing the Act and the regulation.

And I would like to inform the Commission and the public that the CNSC did not go into this licensing process blind. We had international benchmarking with our counterparts where the GoCo program existed, we've taken lessons learned from a regulatory perspective and we never recommended to the Commission the transfer of the licence or the changes without us, taking consideration what lessons learned did take place.

In addition, the licence condition and the Licence Condition Handbook is not unique to the CNSC. When the CNSC went into, the binding treaty, Convention on Nuclear Safety or the Joint Convention, we introduced the licence condition and the Licence Condition Handbook and the ONR, which is the U.K. regulator, has actually adopted that system and they have put in place as of February, 2017, a Licence Condition Handbook that clearly states that there are a -- as a matter of fact, the licence conditions are much more general than our licence conditions. We match them to each SCA.

And, Mr. President, you talk about changes. You mentioned the measurement system. But if you take the existing Licence Condition 2.2, I just want to
clarify the fact to the intervener with respect to the language that we say we cleaned up in the licensing process.

So if you go to page 5 of 32 of the Staff Supplemental CMD, Licence Condition 2.2, I will read the language.

"The licensee shall monitor the safety performance of the CRL facilities and upgrade them when substantial risk factors not recognized earlier appear during operation, or through research findings, or revised safety analyses."

From a regulatory perspective, I think this is ambiguous language. Compliance verification was not clear.

We moved over to the proposed Licence Condition 3.1, that the licensee shall implement and maintain an operating program, which includes a set of operating limits. And we go on.

If you look at the LCH, the CVC requirement specifically talks about taking into consideration operation limits and conditions that include
requirements to review and revise operational limits and conditions due to changes in technologies, regulations, operating information, physical conditions and the outcome of safety analyses.

So this is the clarity and compliance verification we are introducing into the LCH, because the intervenor mentioned the compliance verification that are being used by our inspectors. We have our inspector on site here; that the CVC determines the clarity for the licensee in order to comply with the licence.

Our staff take the CVC from the Licence Condition Handbook. It is not the only regulatory instrument. We have the regulation that the licensee must comply with.

And I’m going up the pyramid to the Act itself.

**THE PRESIDENT**: So I would like to bring some conclusion to this. I would like to hear from staff. Are you satisfied that nothing has been lost because the intervention alleged that something like 20 -- out of memory, 26 conditions be eliminated? Are you telling us that they were not? And from CNL, are you telling us that they are not? And you are telling that they were.
So somewhere along the line we’ve got to reconcile this.

So I want to start with staff.

Your view is that nothing has changed in reality in requirements.

MR. LECLAIR: Jean LeClair, for the record.

So just to be clear, and I believe we’ve made it quite clear in the supplemental. The licence conditions that have been removed are specifically associated with NRU, which is because the situation with NRU, as we have now mentioned a number of times, is changing as of the end of March.

So that is a change and we’ve been clear on that in the supplemental.

In the table we’ve mapped all the licence conditions and shown what the new licence condition is and tried to show quite clearly how those requirements are captured in the LCH.

So that’s what we’ve done. We have gone through this. It was quite an exercise to do this. But we believe it’s provided a lot more clarity on that.

I do want to take just a moment, though, to touch on Mr. Seeley’s comment because he did mention a
comment about mapping. And I want to explain to him and hopefully help him appreciate some of the challenges.

So if we just take an example like record-keeping, the intervenor mentioned record-keeping as an issue; that we didn’t talk about record-keeping.

Well, the management system standard in 286 says thou shalt keep records. In fact, in our supplemental we said the Act says that you need to maintain records. The General Nuclear Safety Control Regulations say you need to maintain records. And a lot of the other regulations talk about records.

So records, if by now licensees don’t know they need to keep records, I think we’ve got a much more serious problem on our hands.

But that being said, management system says you need to keep records. That means you need to keep records for every one of those safety control areas that you see listed.

So there’s 14 safety control areas. If I were just to take that as an example -- and that has in fact been the challenge with this current licence.

If I really wanted to be precise, every licence condition associated with every safety control area should say you need to keep records, because someone might
say well, it says in risk management that you have to keep records but it didn’t say that for physical design. So whatever. We went out and destroyed all our design records.

I’m exaggerating a bit but only to try to get across the message that the whole idea and the whole premise of what we’ve tried to do here, we’ve put a lot of effort into getting 14 safety control areas. It took a lot of discussion internally within the organization to come down to those 14 safety control areas.

And what we try to do is make sure that we don’t replicate them within themselves, because when you start doing that, that’s when confusion starts to happen. That’s when things start to get mixed up.

So if I just used that as an example and said within every safety control area I have to talk about the other safety control areas, then the matrix would be 14 by 14, using some simple math. You can just imagine the size of this thing.

So as we’ve gone through, we’ve made sure then so I don’t need to say records management is important for waste management explicitly because I already said it under management system that says you need to keep records.

And it means you’ve got to keep records
for all the things that you’re doing. So it’s covered.

And that’s why it’s a little bit of a challenge when we -- and this is the challenge with that current licence, is we have some words that have been put into a certain licence condition at some point in time for a reason that was because maybe waste management record keeping was an issue at a licence hearing at some point in time. So the word “record-keeping” got added to it.

We didn’t add it to any of the other ones but yet we know it’s important.

So I hope this helps to try to clarify that really when you look at the Licence Conditions Handbook that framework of the 14 SCAs and then bringing it across and tying it to those regulatory documents helps to make sure we’ve got it all covered.

Again I will reiterate, though, we are going through it. We still have to go through that LCH. We will wait to hear back from the Commission following this hearing.

And with all that information we still have to go through our final review of the LCH because we have a vested interest in making sure that we haven’t lost anything, because it makes our job easier when we’ve made it very clear to the licensee here are the requirements, so
that when we come in and do our compliance verification activities it is clear to everyone, our staff and the licensee.

THE PRESIDENT: Dr. Seeley?

MEMBER SEELEY: Maybe since you were addressing that to me, just on the issue of records, so trying to simplify and cover off in the management system thou shalt keep records. That’s a very broad statement and certainly the Nuclear Safety Control Act defines what elements of the program need to have records. And I’m sure that needs to be defined in the Licence Controls Handbook. So saying it once doesn’t cover it. You point where exactly what you need to keep records for to meet the regulatory requirements.

MR. LECLAIR: Just to clarify, perhaps I should mention when you go and look at the CSA Standards and you look at the regulatory documents, the word “record-management” comes up repeatedly in those documents as well.

THE PRESIDENT: Mr. Jammal?

MR. JAMMAL: Ramzi Jammal, for the record.

I’ll give you a couple of examples but I think we’re turning a factual discussion into a virtual discussion. That’s my fear.
The key point here is, we make reference to the CSA standard that incorporated our regulatory experience in the CSA standard.

In every CSA standard there are two components that are applicable. There is the component with respect to what the industry should do in order to meet the CSA standard and there is the regulatory compliance element, that we at the CNSC, adopt and we put it into the Licence Conditions Handbook, with respect to the compliance verification.

So the CSA standards contain, when we make reference to the CSA standards, contains regulatory requirements that the CNSC has imbedded into the CSA.

The CSA standards complement our Act, our Regulations and our requirements because it’s always improving with the time.

So if you go with the question that the President asked? Did we eliminate conditions or did we remove conditions -- he didn’t say eliminate; remove conditions.

One is pertaining to the non-applicable licence conditions with respect to the operations. Yes, they were removed. These are specific ones for the NRU.

I will just walk you through two examples.
With respect to the licence condition that existed by numbers, we did incorporate them into CSA standard that clearly states what are the requirements from the regulatory perspective. So it may repeat it multiple times.

So I will take you now to existing licence on page 18 of 32, which is the table. Existing Licence Condition 4.12.

It says:

"The licensee shall develop, implement and maintain a program to collect, screen, analyse and document operating experience and events at the CRL site or reported by industry in a systematic way, and to apply the lessons learned to activities at the CRL site."

Now the management system as it’s referenced in our Licence Conditions Handbook clearly describes the requirements by the licensee in order to take lessons learned, to report events, and we have regular RDs that are coming out with respect to reporting to the Commission.

So that licence condition was incorporated
into licence condition of the proposed licence 1.1, which clearly stated that the licensee shall implement and maintain the management system, which has the specific requirements within that management system in order to report events and take lessons learned.

And we do inspect management system. We have specialists in the organization that they do establish guidelines to our inspectors to inspect the management system.

That is our continued enhancement with respect to improvements in regulatory oversight with respect to clarity.

So that is the key point here.

With respect to the NRU, that does not pertain to an existing operation. The licence condition was removed.

So this is what we’re doing with respect to putting together without compromise to safety the requirements with respect to regulatory oversight.

Again the regulatory oversight, the compliance activity, as a matter of fact we have examples. We have imposed additional requirements on the licensee that we did not have before, according to our regulatory experience.
I will leave it at that.

**THE PRESIDENT:** The bottom line is you are saying that you are satisfied with LCH as written, that it will meet all the requirements that they thought was in the old one.

I would like to move on to the CNL. Are you of the same view?

And then I will give you the final word about what you thought about that.

CNL?

**MR. COX:** David Cox, for the record.

CNL has reviewed the draft or proposed licence and Licence Conditions Handbook and we are satisfied with the content.

We looked at, as I said before, the code standards and reg docs that are referenced therein.

Having said that, I would like to ask our Chief Regulatory Officer, Shaun Cotnam, whose staff have been involved in the detailed review of those documents, to provide his additional comment.

**MR. COTNAM:** Shaun Cotnam, Chief Regulatory Officer of CNL, for the record.

So I would have answered Commissioner Seeley’s question the following.
When I first got the Supplemental H2.A, supplemental CMD from staff, the first thing I did was read the first I think 23 pages through the conclusion. Then I took the back 33 pages and I sat down with our current licence and the proposed licence and I mapped them, licence condition to licence condition.

And when I was done that evening, I had accounted for all 27 and all 56.

And I think as Mr. Jammal has pointed out, the CVCs are in there.

So since Mr. Jammal took us to the same page, I think it was 18 of 32, I’ll use another example on that same page. It’s actually page 17 where there were two previous licence conditions on pressure boundary inspection.

One of them said you should implement and maintain the pressure boundary program and the other explained that you would have an Authorized Inspection Agency to do that.

The new licence condition is one licence condition consolidates two. It says the same thing.

So when I was done, it was three simple categories. The first category that were no longer relevant because the changes for NRU, as has been pointed
out; those that were consolidated and added clarity in my view; and the third set, which were like for like replacements.

When I was done, everything fit in those three categories, full stop.

**THE PRESIDENT:** Well, if you’ve done the analysis, invite your neighbour over and maybe you can have a little discussion and you can show him and maybe have a little argument about whether it’s done or not.

**MR. COTNAM:** Dr. Hendrickson and I can go over that at the next Environmental Stewardship Council meeting.

**THE PRESIDENT:** Over to you.

**MR. HENDRICKSON:** Little did I know when I prepared our CCRCA submission and called for revised staff document that has a section on proposed licence changes that fully documents and explains these licence changes, that it would lead to our discussion or whatever we’ve just had.

I think it is non-trivial, though. This is a serious matter. We could spend five times more time looking at this comparison and we didn’t even get into some of the changes. For example, the current licence says that decommissioning activity shall be approved by the
Commission or new construction of new facilities should be approved by the Commission.

Maybe there’s some way that that is covered that I don’t understand. But we could go on and on and on. Clearly we don’t agree about this.

I think what we can all agree is it’s important for the regulator. It’s important for the licensee. It’s important for the public to have as much clarity about what the compliance requirements are for a licensee, what a licensee is supposed to do to keep us safe, to protect the environment.

I just don’t see it in what has been proposed here. I’m sorry.

I would love to see a much clearer document. I think the current Licence Conditions Handbook is much stronger, much clearer, and it acts as that single point of reference. You don’t have to have a huge shelf of CSA documents and reg docs and so forth. It’s there.

I still don’t understand why we can’t have that sort of approach to a licence.

**THE PRESIDENT:** And you don’t believe that the annual report on actual performance will give you a vehicle, a window to see what actually happens and question what actually is happening?
MR. HENDRICKSON: It’s an important thing but it doesn’t offer opportunities for people like myself to intervene and express concerns.

Just like in 2016 when the 17-month licence was given, we can only make written submissions; no opportunity for oral submissions at that point.

And that’s a real limitation.

THE PRESIDENT: Okay, thank you.

Anybody else? So thank you for all the work and the intervention.

So the next submission is an oral presentation by the Ottawa Valley Economic Development Partners, as outlined in CMD 18-H2.7 and H-2.7A.

I understand that Mr. Lemkay will make the presentation.

The floor is yours.

CMD 18-H2.7/H2.7A

Oral presentation by

Ottawa Valley Economic Development Partners

MR. LEMKAY: Thank you, President Binder and Commission Members.
Good evening. I’m Dave Lemkay. I’m the Executive Director of the Renfrew Industrial Commission. That Commission is a member of the Ottawa Valley Economic Development Committee, OVED, that enjoys representation from economic development offices from about the 17 municipalities within the County of Renfrew.

By extension, we also include their respective Chambers of Commerce and BIAs and industrial groups, and so on. So it’s a voluntary group supported by our respective municipalities that allows us to get together monthly. Basically it’s our business to grow and to retain our business, to grow our business across the Ottawa Valley.

I was asked by my colleagues, I guess because I was the oldest, I think, to present tonight.

And I’ll segue to say that on a personal note, I was employed 50 years ago at NPD Rolphton. In fact, I spent Saturday afternoon in the old control room listening to the decommissioning information that was being put out. It was kind of a sad day to see the look of the place now. But 50 years ago I was there.

My wife 50 years ago worked in the computer building 508 here at AECL. So women in the industry, it goes back quite a ways. And she had a lot of
women colleagues at that time.

In the ensuing years I had a career with Natural Resources Canada at the nearby Petawawa National Forestry Institute, which is just across the highway you might say. And in fact we had research plots on the AECL property.

So my involvement with AECL continued also through a number of years with the Deep River Science Academy and the Renfrew County Regional Science Fair.

And I just reminded myself tonight when I heard some language that I was also part of the team for the emergency evacuation exercises that are mandatory, and that we did some very interesting things on that front.

So in this vein I am pleased to present what I will say will be a simpler and a shorter presentation than many we’ve seen, mainly because we are here to offer our support for the renewal of the licence within the scope of wanting to grow our economy, retain our youth, to retain business and see our rural community supported with this signator signal operation that we have here at Chalk River.

We recognize that CNL has $300 million annually and 2,800 employees, and we know all of those facts, all of those data.
We recognize that CNL -- CRL, I should say, is keystone in our Valley’s technology centre. And again I go back to youth retention, attracting new residents and growth in the area.

We know that the company contracts locally and that’s good for business in the area. We’ve had three new hotels investment building going on in the last few years in the area, and there is the prospect of another one.

So CNL along with Garrison Petawawa are our two biggest employers in the Valley, and we are very supportive of progress in that vein and want to support it with our verbal commitment here.

We are proud in the Ottawa Valley that we’ve been a multi-generational host to nuclear technology. I’m going back to the 1940s. I’m going to say probably everybody that I’ve known in the area over decades used to lovingly call AECL “Uncle AECL”. Everybody worked for “Uncle AECL”. It was a wonderful institution and continues to be and we are very proud of it.

It’s a value proposition for the Valley and our Valley people are proud. We have a rich history here and we have a rich future, we believe.

So I think it’s important to say too that
we’ve had a number of spinoff industries that you will be aware of probably: BWX Technologies in Arnprior, Nu-Tech in Arnprior, Bubble Technology in Chalk River, SRB in Pembroke and ETM in Renfrew.

All of these companies are employing in the vicinity of dozens and scores of employees, and they all have contracts and they are all dealing with spinoff technologies that have come out of AECL and CNL.

So with that said -- and as I said, I would be brief and we’re not contentious -- we are here to support the renewal of this licence, and that’s coming from the grassroots industry and business in the Valley.

THE PRESIDENT: Thank you.

MR. LEMKAY: Thank you.

THE PRESIDENT: Questions?

Dr. McEwan.

MEMBER McEWAN: Thank you.

How do you see this in over the next 10 years developing to educational opportunities and creating new educational pathways for the youth here?

MR. LEMKAY: Well, we've already seen an example of Algonquin College at the Waterfront College in Pembroke where they've instituted a new radioactive -- I'm not quite sure of the terminology ...
--- Off record discussion / Discussion officieuse

**MR. LEMKAY:** Radioactive protection program for college diplomas. That's new. The college is new, frankly, and we're proud to have that on the waterfront. And I'm sure that there are other community colleges, maybe at Sheridan or maybe in southern Ontario, Pickering, that offer these things.

But we've got a problem with job -- with retention of youth. We've got a problem with succession planning in our business and industry. And we've been on the -- for a number of years on the other side of the digital divide up here. We have solved that problem. We now have broadband, we now have full cell coverage. And you know, that's not an issue in the city, but it's an issue around here. If you were driving through Barry's Bay, you wouldn't have cell coverage until you got into Algonquin Park, and they have it there but we don't -- we didn't have it here.

And so all of these things are -- we're in a paradigm shift, I believe, where we're -- our businesses are having to transition from the traditional businesses that we've seen. It isn't going to be the same 10 years from now, and we need to be on -- we're on the cusp of a change, and I think that progress and success here at Chalk
River will aid the rest of our economy.

**THE PRESIDENT:** Questions?

So I was impressed by your committee, this clearly wide representation for all the municipalities including the Algonquin.

So did you -- how often do you get a presentation from CNL about what's going on in the CNL and have you discussed that proposed 10-year licence and future development, et cetera, et cetera?

**MR. LEMKAY:** That's a good question. And we did have -- we have a representative on our OVED committee from Chalk River. The last lady, her name was Porricks (phonetic) -- I forget the full name -- Shelley -- it was a hyphenated name. Shelley went on to other things, I think, in Kingston.

But we now have a new representative that attends our meetings and keeps us apprised of all of these issues. And in fact we're fully informed, I think, as much as we can be with what's going on. So we're engaged in that way.

We're -- you know, you mentioned the Algonquins. We're engaged with Pikwàkanagàn and the First Nations here. We're engaged largely with our forest sector, which is a big industry in the area, and tourism,
of course, and whitewater rafting and all those things.

But the significance of CNL and the work that goes on here being world leading and at the focus of a lot of international attention, it's a wonderful anchor upon which we can work to grow our economy.

THE PRESIDENT: Okay, thank you.

MR. LEMKAY: Thank you.

THE PRESIDENT: Thank you very much.

I'd like to move on to the next submissions, which is an oral presentation from Ms Hanewich as outlined in CMD 18-H2.6. I understand that the intervenor is coming to us via teleconference. Ms Hanewich, can you hear us?

MS HANEWICH: Yes I can, can you hear me?

THE PRESIDENT: Yes, I can. Please proceed.

CMD 18-H2.6

Oral Presentation by Kim Y. Hanewich

MS HANEWICH: Okay, hello. I'm Kim Hanewich. I grew up on the north shore of Lake Ontario and have lived the last 30 years 15 kilometres north of Barry's Bay in Wilno, where I raised my two sons, both of
whom trained in science, by the way.

I'd like to thank the Canadian Nuclear Safety Commission for allowing me to voice my concerns about the Canadian Nuclear Laboratories' application for the renewal of the Chalk River Laboratories site licence at this hearing.

The extent of deregulation and lack of reporting in the CNL application is of great concern to me. In order for the CNSC to monitor, oversee, and make decisions about safety into the future, I feel new, more stringent regulations, oversight, and reporting need to be instituted. Both the location on the river and the surrounding sandy conditions concern me, and I feel tighter controls that are particularly geared to decommissioning and storage activity are warranted.

I feel responsibility for monitoring and reviewing reports should fall under the mandate of the CNSC rather than relying on increased self-regulation and reporting by CNL. Given the potential for the long-term impact of mistakes due to lack of information, we can't afford to get this wrong. I urge the CNSC to err on the side of caution, responsibility, and more appropriate regulation geared to decommissioning activities and storage of nuclear waste.
Issuing only two-year term licences would give the CNSC more control over putting any required changes in place more quickly than having to wait for a longer-term licence to expire.

The CNSC owes it to our rivers, water table, lands, and each of us to protect us from any potential nuclear or toxic contamination. I wish you all courage and wisdom in your work moving forward, and I thank you for hearing my submission.

Now I did listen to Dr. Hendrickson and I listened to all of the questions and answers regarding the 26 conditions that were deleted and -- of the 56 licence conditions. And I did listen and I heard what people said.

My concern would be geared more toward not the licence conditions that were eliminated because it's not an active site, but new conditions that need to be looked into around decommissioning and the storage of nuclear waste. And that concerns me a great deal, especially when we talk about our future and our children and everything.

THE PRESIDENT: Thank you.

Questions? Dr. McEwan.

MEMBER McEWAN: Thank you Mr. President.

Thank you for the intervention,
Ms Hanewich. I'm guessing in some ways paragraph 5 in your letter is the key one. And I just wonder if it will be helpful if staff could give some clarity to the expectations in terms not only of reporting but future planning for how the deconstruction of the site where that happens will be handled and the waste will be regulated.

**MS HANEWICH:** That would be great.

**MR. LECLAIR:** Jean LeClair for the record.

If we go back to the licence and licence conditions, we actually specify the requirements with regards to a waste management program as well as requirements for decommissioning.

If you go the table -- let me see if I can take a minute here and open it up so we can point to it directly. If you can just bear with me a moment.

So we already talked previously about the waste management program that then points to a number of CSA standards, and that sets out the requirements for how waste will be managed at the site. And the CNL has mature waste management programs in place. And those are going to continue to evolve as they go forward. And these are things that we're going to continue to look at.

If we go back, we've already said now a few times already, but perhaps it's worth rementioning, one
major change in the waste management program is the proposal for a near-surface disposal facility. And I think we can all agree it's a fairly significant proposed change. But it is going through a separate public hearing. It's going through a separate review. So certainly there will be ample opportunities for a lot more discussion on that proposed project. And if we look at the intervention, in fact, there's a mention about the five- to seven-storey mound, which I believe is in reference to that proposed project.

Speaking specifically with regards to decommissioning, it's actually the next licence condition. So I'm looking at page 28 of 32 on the supplemental. We then point through and we lay out requirements for decommissioning, and then point now to another standard, which is N294. And if you actually look at the LCH, we actually talk specifically about decommissioning plans. We lay out that licensees have to have decommissioning plans for each of their buildings, and we've identified that if it's a Class I or a Class II facility, so if it's one of the high-risk facilities, that that plan would need to be submitted to staff so we can look at it in more detail.

So those are all things that have been laid out that are captured in the licence, licence
conditions handbook.

And I want to come back, because I think we touched on it briefly, but the importance of our regulatory oversight report. One of the key things that we may not have mentioned yet is the regulatory oversight report, one, is to talk about performance, but it's also to talk about changes. So --

**MS HANEWICH:** [indiscernible - multiple speakers] --

**MR. LECLAIR:** -- clearly we know that the situation at Chalk River will evolve, because that's a big part of their program is looking at waste and decommissioning. And through the regulatory oversight report, that will be the time at which, in a public meeting, we will be reporting on how decommissioning is going on at the site. So this will be coming forward to the Commission quite regularly to make sure that people are informed of what is going on.

So I'm not sure if that helps clarify a bit, but the licence, licence conditions handbook --

**MS HANEWICH:** Was that report the annual report you were referring to earlier? Is it an annual report?

**MR. LECLAIR:** So that is correct. That's
the annual regulatory oversight report. I'm just looking to the Commission to make sure I'm getting recognition here.

**THE PRESIDENT:** I'm surprised you didn't mention -- I thought the long-term view about where the site -- I think the intervenor is really looking for the long-term view -- would be captured in the ongoing update of the comprehensive preliminary decommission plan, which is -- an update is due -- when is the next -- I mean there's -- normally they have to do it every four years, if memory serves right -- or five years. So but you don't have to be bound by the five years, because you're now -- you now have some new proposals.

So when is the -- when are we to expect the next most up-to-date plan?

**MR. KEHLER:** Kurt Kehler for the record.

We are currently going through the revision of that plan and in comments with our client AECL. So I would expect it within the end of this quarter, probably by the end of March.

**THE PRESIDENT:** I suspect the government would be very interested in the long-term updated plan, and I assume costs go with it too.

**MR. KEHLER:** That's correct.
MS HANEWICH: Also, if you -- in your annual reports, if you -- I can understand why AECL or why Chalk River is where it is with an active -- with a reactor, you want it on water. But way you were two years in or four years in, and you decided that things were being decommissioned and things weren't the way you wanted them with regard to that site and storage on the river. Would -- is that the kind of thing you would bring up in your reports?

THE PRESIDENT: Specific staff you may want to talk about -- we're now getting into outside of scope, because some --

MS HANEWICH: Oh sorry.

THE PRESIDENT: -- some of those -- some of those issue will have their own hearing process to deal with.

MS TADROS: So Haidy Tadros for the record --

MS HANEWICH: So the license doesn't deal with that, then?

THE PRESIDENT: Go ahead.

MS TADROS: Haidy Tadros for the record. That is correct, sir. The current proposal and application before us doesn't include the
near-surface disposal facility. We will have an opportunity with CNL to come forward with staff's assessment and recommendations for a facility such as the near-surface disposal facility in due course.

But it's important to note that regardless of what is on the site now or in future, there are robust programs in place like the environmental monitoring programs and environmental management programs that ensure that regardless of the activities that are authorized or the facilities that are being constructed or demolished currently, these programs are in place to ensure that ongoing monitoring emissions are maintained. There are regulatory requirements both in the CNSC regulatory documents and in CNSC standards that are cited in the licences and licence condition handbooks that CNL needs to abide by. And as we heard --

**MS HANEWICH:** And are they subject -- are they subject to change as they move along? Those regulations.

**MS TADROS:** Haidy Tadros for the record.

Just to complete my sentence with regards to the requirements as they're found in the licence and licence condition handbooks. One of the notes on page 28, as Mr. LeClair was pointing out to us both with regards to
the waste management program and the decommissioning plans, there is a line there that says the CVCs, the compliance verification criteria, also lists all of CNL's specific program documents. And as part of our licence compliance handbook, we indicate that any changes to those program documents need to be reviewed by and notified to CNSC staff. So we are aware of all changes that happen to program documents as well. And that forms part of when we come before the Commission during annual reporting giving you an update on how these programs are performing.

MS HANEWICH: Thank you.

THE PRESIDENT: Thank you.

Any final comment from you?

MS HANEWICH: Thank you for hearing my concerns. I appreciate it.

THE PRESIDENT: Okay, thank you.

We move on to the next submission which is an oral presentation from Ms Paul as outlined in CMD 18-H2.11, again coming to us by teleconference.

Ms Paul, can you hear us?
CMD 18-H2.11

Oral Presentation by Danielle Paul

MS PAUL: Yes I can hear you.

Thank you for hearing me. For the record my name is Danielle Paul. I'm a resident in Madawaska Valley here in the County of Renfrew. I am a resident seeking transparency and oversight regarding these matters. I have roots in the valley. My ancestors came to the Ottawa Valley in the 1800s, so that is basically my status.

I will not deal with point 5 in my letter, which I gather is going to be discussed when the near-surface disposal facility hearings are held. But I would just briefly summarize what I'm saying.

The proposed licence term for 10 years is much longer than any previous licence term. I believe this is unacceptably long for a new licensee undertaking new activities on the site. I would like the government to exhibit wisdom in taking appropriate care with highly sensitive and dangerous operations rather than aiming for the cheapest option.

My concern is that Canada may not be able to maintain oversight without clearly defining in precise terms what the oversight will be and what is best practice.
That said, I have looked through some of the supplementary materials that were recently filed and see that some of the items in the licence that appear to have been removed have now been added in another spot, I guess in the preamble and in some other documentation.

Another issue that I am concerned about is the prospect of mixing toxic waste materials at Chalk River site. And again I think detailed criteria for an oversight of importing or potential importing is an issue. That may well be dealt with, although I'm not sure if transport comes under the NSDF hearing.

And then the final point that I want to raise is my concern regarding the newly formed consortium. I understand that there have been some serious issues with the management structure, and I feel the regulator should monitor the management structure and the public deserves to have transparency into that oversight.

Thank you for listening to my concerns.

**THE PRESIDENT:** Thank you.


**MR. DEMETER:** Thank you for the presentation, Ms Paul.

Can you be more -- you talk about issues
with management structure that need to be addressed, but could you be more specific? And maybe we can address your concern versus a very broad statement that I don't know how to even field the question.

**MS PAUL:** Okay, and I'm not management expert. It just seemed to me that it is a complicated kind of structure to take a government corporation and then run it through -- I guess you're calling it a GoCo management model. And it seems to me that the more complex and the more fingers there are in the pie, the more oversight needs to be there to protect the environment and protect the public.

**THE PRESIDENT:** Were you -- did you have a chance to hear the discussion we had about that specific item just maybe within the last --

**MS PAUL:** No.

**THE PRESIDENT:** Okay.

**MS PAUL:** I'm sorry, Mr. Chairman, I was unable to listen to that.

**THE PRESIDENT:** So I think somebody's here to maybe give you the 10-second clip, or else you can read the transcript when it's produced.

**MS PAUL:** Thank you.

**THE PRESIDENT:** Dr. Quinn?
**MS PAUL:** I will do that.

**THE PRESIDENT:** Go ahead.

**MS QUINN:** Shannon Quinn for the record, from Atomic Energy of Canada Limited.

So I believe that your intervention is pointing specifically to the special examination done by the Office of the Auditor General. The findings of that report were actually that Atomic Energy of Canada Limited had good governance practices as well as good contract-management practices. There was one significant deficiency noted in that special examination. It related to Governor in Council appointments, which the OAG acknowledged was outside of the control of the Crown corporation.

And I should note that subsequent to the completion of that special examination there have been a number of appointments, including the appointment of a chief executive officer as well as the chair of the board and other board members.

**MS PAUL:** Thank you.

May I just ask this: the Auditor General obviously looked at AECL, but did -- who looks at CNL? Who looks at the licensee in that respect?

**THE PRESIDENT:** Go ahead.
MS QUINN: Shannon Quinn for the record.

So Atomic Energy of Canada Limited is a federal Crown corporation and agent of government, is fully responsible for overseeing that GoCo contract, which means that we oversee all of the activities of CNL to deliver on the requirements under the contract. So it is AECL that is responsible from a government perspective to ensure that Canadians are receiving good value for money under that contract.

THE PRESIDENT: And CNSC?

MS TADROS: Yes, Haidy Tadros for the record.

That is correct, sir. And the CNSC, as the regulator, is responsible to ensure that CNL, as the licensee and the enduring licensee, no matter what happens to the contract, has a robust and effective management system, thereby controlling their programs, their operations, the training of their staff, and the safety culture that goes with ensuring that every employee knows their roles and responsibilities and is free to raise issues.

THE PRESIDENT: Okay. Any other questions?

Ms Paul, any final word?
MS PAUL: Thank you very much for allowing me to speak and for responding.

THE PRESIDENT: Thank you.

MS PAUL: I appreciate the opportunity.

THE PRESIDENT: Thank you very much.

CMD 18-H2.31

Presentation by the Green Party of Ontario

THE PRESIDENT: The next submission, which is an oral presentation by the Green Party of Ontario, as outlined in CMD 18-H2.31.

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

MR. SCHRAM: (Off microphone) the candidate for Ottawa South in the provincial election.

You may know the Green Party as an environmental party but it's more than that. We are also concerned with, you know, social justice and the economy generally. We are basically trying to run our party on the premise that policies should be developed on the basis of evidence. So this hearing is really interesting because you are presenting a lot of evidence. I appreciate that.

Now, I also have to say that the Green
Party certainly respects the professional expertise of CNL and of the AECL. We have no -- we recognize that you have highly qualified physicists, engineers, technicians. In fact, on a personal level I have to say that my son is a physicist. He has worked locally, not at AECL and he has worked in projects with enormous engineering complexities, and so I appreciate very well the work that you are trying to do.

Now, I wish I had been able to follow the proceedings throughout the day but, of course, I was very busy. I do work. I do work for the party as well. Had I been able to follow it, my thoughts on this whole process would probably have evolved and they probably would have changed.

But I've got to make some comments first on some of the submissions. Many of the submissions focused on the important role of CNL and the economic development and livelihood of the community, that the Garrison of Petawawa has pointed out the importance of their collaboration with CNL and other submissions highlight the importance of Chalk River facility to do scientific research.

I want to say on behalf of anyone who is opposed to the licensing extension or considered that the
changes to the handbook that were inappropriate, this is -- you know this opposition has nothing to do with jobs. Our opposition has strictly to do with the extensions of the operating licence.

What was that?

**MR. WEST:** It's from the previous one.

--- Laughter / Rires

**MR. SCHRAM:** Okay. So it doesn't put -- you know, any opposition would not put any scientific research at risk. It doesn't cut jobs. It doesn't harm the relationship of the garrison. We're strictly interested in this hearing in terms of the extension of the licence and any proposed changes to the handbook.

So the Green Party does oppose the proposed extension and we had opposed the proposed licensing changes. I think we would draw back on the concerns about the proposed licensing changes if CNL and the CNSC would guarantee that nothing of substance is lost and that they would present this to us in writing. I think that we could live with that but we want -- we would like to see it in a transparent way.

We do oppose the licensing extension, notwithstanding. First of all, the licensing agreement says that it can be suspended in whole or part, amended,
revoked or replaced. That's good, but absent regular operating licence renewals, we believe this provision has weakened and may be rendered ineffective. We would like to find some way that you would have put some teeth into that.

There is a longstanding history of renewing licences for between three and five years. This has worked well in the past and would work well in the future if it isn't broken don't fix it.

Now, the CNL has a six-year contract with Atomic Energy of Canada and with potential extensions of two years each. We think that the operating licence renewal should be linked in a reasonable way to the AECL's contract but perhaps the licensing should lag by a year and a half over the contract extensions. We just don't see the merits though of extending the operating licence to 10 years. Three to five years would seem appropriate.

We also note that the goal of a not-for-profit enterprise such as CNL is to make money for its owners. We have no problem with a profit-making goal, but we also note that the quality of the product must be sufficient. The cost must be reasonable and the benefits clear. Opportunities result but the crazy monopoly is not easy.

So we understand that compliance with
regulations can be costly and intrusive. The strict regulations ensure quality control, so please make sure that the regulations are strict.

We know that CNL is dealing with highly toxic materials in close proximity to rivers and population centres. We know that any operational mistakes would be costly and could risk the health and safety of CNL's workers and the public.

So again, we want strict regulations and we want regular licencing reviews -- renewals. In this respect we note that CNL's is an offshoot of AECL but it has only been in operation since 2014. Any organization that has had a recent change of ownership or has recently restructured is subject to errors of judgment and operational mistakes that do not always appear immediately. We can't take it for granted this won't happen. So again, we think a shorter licensing period is required.

So we note that the taxpayers of Canada require significant oversight because liability rests -- for failure rests with the Government of Canada, that is to say the taxpayers. It may be that these liabilities are fully funded but it doesn't mean that it doesn't come out of our pockets. So we want to make sure that there are no operational errors and there no operational failures.
So we request that the Commission would shorten the licensing period and that they guarantee that the changes to the handbook are non-substantial and they put that in writing.

I have some questions, though, before I go on. I know that we're talking about liability and I know in the question period or in the answer period that it was stated that there were liabilities and the liabilities were approximately $7 billion and booked by the government fully funded. I wonder, is the liability for health, safety, the environment? What are the -- how does this number arrive and what does it cover?

I will put that to CNL or whomever.

THE PRESIDENT: Is your submission --

MR. SCHRAM: Yeah, I finished my submission, but I do have questions.

THE PRESIDENT: Okay. Well, we will get into it.

MR. SCHRAM: That's because you were so informative.

THE PRESIDENT: Okay. Who wants to start with that?

The question is what is the $7 billion liability? Who wants to...?

THE PRESIDENT: I think there is a misunderstanding of what it means. So we have Dr. Quinn here and --

MR. SCHRAM: Is it AECL?

THE PRESIDENT: -- AECL.

MS QUINN: Shannon Quinn for the record.

The $7.6 billion is the estimated cost to fully remediate the radioactive liabilities that are the responsibility of Canada. So that includes all of the liabilities that would be at the Chalk River site which are the subject of this licensing hearing but for completeness.

I should also mention that that $7.6 billion includes the liabilities associated with the low level of radioactive waste in Port Hope. It includes the liabilities associated with the reactors such as MPD, Gentilly-1 and Douglas Point as well as the liabilities at AECL's Whiteshell site. It also includes other smaller sites and liabilities that have come under the responsibility of AECL because the original owners are no longer able to take care of those.

So what $7.6 billion represents is the current estimated costs to fully discharge those...
liabilities, that is, to fully remediate, manage and dispose of those liabilities.

THE PRESIDENT: Thank you.

MR. SCHRAM: I have another question.

THE PRESIDENT: Go ahead.

MR. SCHRAM: You referred to the CSA Standards. I wondered if they are available to the public?

THE PRESIDENT: I guess you weren't here when that was discussed.

MR. SCHRAM: It was?

THE PRESIDENT: Big time.

--- Laughter / Rires

MR. SCHRAM: Okay.

THE PRESIDENT: And I am sure it will continue to be discussed. I would suggest that you either watch our webcast, you know, which we put in and you can watch it or read the transcript. But it is the intention here just to repeat, if I understand from staff, that it will be available and maybe improve access to those CSA documents.

MR. SCHRAM: Thank you very much.

Just to reiterate we are opposed to the extension of the timeline. We presented our reasons. We think they are good. We hope you will listen.
Thank you.

**HE PRESIDENT**: Okay.

Questions? Anybody has a particular question?

Okay, thank you. Thank you for your intervention.

Okay. We will take a 10-minute break. Then we will come back here and go through the written interventions. Thank you.

--- Upon recessing at 8:48 p.m. /

Suspension à 20 h 48

--- Upon resuming at 9:01 p.m. /

Reprise à 21 h 01

**THE PRESIDENT**: If you can't tell, it's late and it has been a long day. Nevertheless, we are going to continue with written submissions.

**MR. LEBLANC**: Yes, Mr. President. As Kelly was doing earlier today, I am going to go and I am going to name the intervenor and the number of the CMD and then ask the members if they have any questions on that particular intervention.
CMD 18-H2.53

Written submission from Sandra Finley

MR. LEBLANC: So the next submission is a written submission from Sandra Finley, CMD 18-H2.53. Any questions?

MEMBER McEWAN: Just for clarity, going back to our last intervention, the intervenor is suggesting the financial liability is $30 billion worth and, yet, we heard $7.6. Is that the correct figure, 7.6?

Thank you.

CMD 18-H2.54

Written submission from Ish Theilheimer

MR. LEBLANC: So the next submission is from Ish Theilheimer, CMD 18-H2.54. Any questions?

CMD 18-H2.55

Written submission from Renfrew County United Way

MR. LEBLANC: The next submission is from Renfrew County United Way, CMD 18-H2.55. Questions?
CMD 18-H2.56

Written submission from Robert Farley

MR. LEBLANC: So the next submission is from Robert Farley, CMD 18-H2.56. Any questions?

THE PRESIDENT: It's not a question, but it's a repeat theme about relaxing regulatory oversight which I thought we have been -- which was dealt with and there is no point re-studying this question here.

MR. LEBLANC: Yes, Dr. Demeter?

MR. DEMETER: One of the -- the intervenor talks about significant change in the proposed licence period and I suspect that might be related to the aspirations of CNL of all the things that are actually not considered for the licence right now.

But I want to get a sense from a regulatory point of view from CNSC, if there is a 10-year licence how much change do you anticipate based on what you know from CNL and their agenda within that 10 years? Is there -- is it a significant dynamic, 10 years, or is it like for a nuclear operating station that's going to run for 10 years and there might be some refurbishment, but this is a very complex multi-licence or one licence but multifaceted industry.
So that's unique about this licence. It's a complex multi-function nuclear-type facility with a lot of activities going on. What's the dynamic component?

**MR. LECLAIR:** Jean LeClair for the record.

First, begin by saying that the licence itself and the way it's structured is there are changes that are allowed that we expect over time, but there are changes that fall within licensing basis

So really, what we need to say is any change that they want to bring forward that falls outside of the licensing basis, such as the near surface disposal facility, will come back to the Commission.

So I think it's important to say that a 10-year licence doesn't give CNL this freedom to do whatever it wants for 10 years. It has to operate within its licence and if there is any changes they want to bring forward that falls outside of the licensing basis, these will come back in front of the Commission in a public hearing and go through a full authorization.

And again, I use the near surface disposal facility as the best example because it's the one that is going on right now.
CMD 18-H2.57

Written submission from Town of Petawawa

Mr. LEBLANC: The next submission is from the Town of Petawawa, CMD 18-H2.57. Any questions?

CMD 18-H2.58

Written submission from Hell or High Water (HOHW)

Mr. LEBLANC: The next submission is from Hell or High Water (HOHW), CMD 18-H2.58. Any questions?

The President: I like the name.

--- Laughter / Rises

CMD 18-H2.59

Written submission from Deep River and District Hospital

Mr. LEBLANC: So the next submission is from the Deep River and District Hospital CMD 18-H2.59. Any questions?

The President: Go ahead.

Member McEwan: I would just be interested in what type of collaborative initiatives that you have with the hospital? I think it will be helpful to
understand that.

**MR. COX:** David Cox for the record. I would like to ask Kevin Daniels to answer the question.

**MR. DANIELS:** So we have a number of things. So there is some radiation protection training we provide them because they could be one of the hospitals if we had some accident that happened onsite and we had contaminated individuals going there. So we provide the training so they're prepared for those types of things.

Another thing that we do is fundraising efforts. For example, we had a hockey tournament this last weekend that raised about $40,000 and $10,000 went to a family in need and $15,000 each went to the Deep River hospital and the Pembroke hospital.

So we are part of the community. We, myself and my deputy, have gone to their meetings where they talk about the needs of their hospital, what fundraising activities there are, and how can we better interact with each other to provide -- like, one of the things that we look at is the radiation protection instruments they have just for their ongoing x-ray operations. Is there a way that we could help them be better in how they actually utilize that equipment?
So a number of things just in a collaborative way because they are part of our community.

**THE PRESIDENT:** Do they participate in emergency exercises, emergency planning, you know accident simulation, et cetera?

**MR. DANIELS:** Kevin Daniels for the record.

So we have a routine set of drills that we do. They are part of that list of things. Last year we did some stuff with Petawawa where we had a transportation accident that we actually did out in the town with the fire departments and other people involved.

So they are on a cycle and, yes, they do participate.

**THE PRESIDENT:** Thank you.

**CMD 18-H2.60**

**Written submission from**

**Canadian Cancer Society, Renfrew County**

**MR. LEBLANC:** The next submission is from the Canadian Cancer Society, Renfrew County, CMD 18-H2.60. Any questions?

**MR. DEMETER:** Just an observation. It is
somewhat optimistic note that an agency whose primary goal is prevention and treatment in cancer research is supportive of this industry, noting all the data -- notwithstanding the evidence and data relative to doses beyond the fence and the public doses.

So it's just something that I noted as this is an agency whose primary responsibility is the detection and primary prevention of cancer, and they are supportive of the -- I just noted that.

CMD 18-H2.61
Written submission from the
Canadian Association of Physicians for the Environment

MR. LEBLANC: Le prochain mémoire a été soumis par l'Association canadienne des médecins pour l'environnement, the Canadian Association of Physicians for the Environment. Any questions?

CMD 18-H2.63
Written submission from
Corporation of the Town of Laurentian Hills

MR. LEBLANC: The written submission is
from the Corporation of the Town of Laurentian Hills, CMD 18-H2.63. Any questions?

MEMBER McEWAN: Perhaps I could just use this as an example. I mean they talk about the communications you have with corporations and town. So presumably, this would be a standard protocol you would have for all of the surrounding towns. How would you build that and ensure that you're sort of getting the right message across?

MR. COX: David Cox for the record.

We have a very active public communication program, and I'll ask Pat Quinn to give us some details.

MR. QUINN: Good evening. Pat Quinn for the record.

With respect to our local municipalities in both the Pontiac and Renfrew County, we work hard with the organizations to help them to understand our operations. We have opportunities to meet with them through our Environmental Stewardship Council. That's the three times annual meeting that is held here in Pembroke or in our host community, Deep River, and also on site, and the municipalities are represented there.

And then also we do provide direct updates to councils, so we will attend councils. For example,
Laurentian Hill is on our list and one of our nearest neighbours, and so we will make presentations to the council.

**CMD 18-H2.64**

*Written submission from the Renfrew County Regional Science Fair*

**MR. LEBLANC:** The next submission is from the Renfrew County Regional Science Fair, CMD 18-H2.64.

Any questions?

**THE PRESIDENT:** They made comments about lamenting the demise of the Deep River Science Academy, so maybe that's an opportunity. I think you mentioned also that you bring in students, summer students, to the site. Maybe you can give us a little bit on what replaced this very popular -- it was a very popular program, if memory serves right. So what's the current thinking about the future?

**MS McCARTHY:** Kathy McCarthy for the record.

I mentioned earlier that we recently engaged in a partnership, the Foundation for Student Science and Technology, and that's an activity that's
really focused on high school-aged children, young men and women -- I guess they're not really children at that point -- men and women, and initially it will have a specific focus on women.

Now the future of our laboratory depends on the influx of students, and our summer intern program is actually -- is quite strong. It's a way to give students an opportunity -- and this is more in the undergraduate and graduate school age -- give them an opportunity to come and work at CNL, expose them to the kind of work that we do, and get them interested in coming to work with us. They also bring new ideas and out-of-the-box thinking, so, really, it's a win-win in my opinion.

So activities such as the FSST, having summer interns, are a big part of what we do at CNL.

THE PRESIDENT: So the Science Olympics for 9 to 12, is that still ongoing?

MR. COX: David Cox for the record.

MS McCARTHY: Sorry.

So I believe what they are referring to there, there is what I would call a science fair, that I have helped judge at. I judged at it last year. I'll judge at it again actually in April. I think that's what they're referring to there.
So that is something that we participate in, in terms of judging, and it gives us an opportunity to interact with the students.

THE PRESIDENT: But it's not run by you, it's somewhere else?

MS McCARTHY: No, that's correct. It's not run by us.

THE PRESIDENT: Okay.

MS McCARTHY: We're just a support, yes.

THE PRESIDENT: Thank you.

MS McCARTHY: Kathy McCarthy for the record, sorry.

THE PRESIDENT: Go ahead.

CMD 18-H2.65

Written submission from Mary Josey

MR. LEBLANC: The next submission is from Mary Josey, CMD 18-H2.65

MEMBER McEWAN: So in this intervenor's second paragraph there are a couple of comments that I just wondered about. The first was "young and old valued employees have to leave" and "They feel unheard as employees."
Is this a cultural change or is this just one perspective?

MR. LESINSKI: Mark Lesinski for the record.

We're doing a number of things right now to try to connect with all the employees. When we came to the site in September of 2015, one of the first things we did -- actually, it was before that, it was in the summer before we took the shares and we were at the site permanently -- we started what's called our Listening Campaign. It's where all of our executive team, myself included, would have meetings with staff in small groups to really understand what was going on, what issues they had at the site, what problems they had in getting work done, what the morale was, all those sorts of things. We've used that to build our program as we go through this transformation process.

We've done the same. We did that through the beginning of that term, when we were going through transformation. This is something that comes out also of our employee survey that we talked about and I talked about during the opening comments: that we look at all the issues that are going on there.

We've also upped all our communication
methods that we have at the site.

So we're out talking to people individually. We're using video methods. We now have what's called My CNL TV. So people can listen to a topic that we have and we can hear their concerns and bring them back.

So there's a raft of different ways that we are working with our staff to understand what their concerns are.

A very important one, though, is around the NRU reactor, because we have over 500 people that are impacted. One of the things we put in place there is our retain, retrain, and redeploy individuals to the other missions and the other work that we have going on at the site.

So we are doing a full blitz on trying to understand the issues that we have with people, and what their concerns are, and if they feel wanted and if they feel we're going in the right direction.

There's no doubt in my mind when you have a population of 2,800 people that there will be some people that feel disenfranchised, aren't ready for the changes, and need to, you know, perhaps do something different. But we certainly want to try to keep as much of our staff as we
can, and we are listening to them all along the way.

**MR. DEMETER:** With any management organization there are many metrics, and what I read into that statement from the intervenor is that at the transition from AECL, as the employer, to CNL, as the employer, the metrics would say: what was your staff turnover at that transition? So how many people left the company, as a percentage, and then you probably have to recoup with hiring new people.

So in that transition time, do you have a sense of what the delta was on the current existing AECL employees who didn't transition?

**MR. LESINSKI:** Oh, I left mine on. Marc Lesinski for the record.

I gave our HR director the night off because we have very few people at the site. As you can see, they're all sitting here, the management team, so as far as the exact statistics. But I do know -- and this will be more anecdotal, I don't have the number at the tip of my tongue -- but we have always had an attrition rate, a certain level of attrition, of course. That did not change significantly when we moved over to the GoCo model. In fact there was kind of a change in the feeling: that, hey, there's hope, there's a change here. And it's not all
about cleanup. There's also ongoing missions. So that did not change.

There is a change that will be coming up in the near future because the pension program is going to be ending, so there will be a dip when that occurs because there are some people who aren't going to be happy with that kind of a change. But from a statistical standpoint, we did not see a huge exodus of individuals because of the changeover to the GoCo at the time.

CMD 18-H2.66

Written submission from Christina Anderman

MR. LEBLANC: The next submission is from Christina Anderman, CMD 18-H2.66.

Any questions?

CMD 18-H2.67

Written submission from Kinetrics Inc.

MR. LEBLANC: The next submission is from Kinetrics Inc., CMD 18-H2.67.

Any questions? No.
CMD 18-H2.68

Written submission from Judith Maclean Miller

MR. LEBLANC: The next submission is from Judith Maclean Miller, CMD 18-H2.68.

THE PRESIDENT: Okay, so I'll bite on one of those.

On the second page, they want to give again where a particular requirement was deleted, so it says -- it's the second -- "For instance: in the current licence", and then there's another "in the current licence-- Operational Experience Program", "proposed change-- Delete."

Can somebody take a look at this and tell me if it's true or not?

MR. LeCLAIR: That's actually the example that Mr. Jammal went through before, so it actually --

THE PRESIDENT: It doesn't have the number here, so I just want to make the -- if the intervenor is listening --

MR. LeCLAIR: We can find the actual number here if you just can hold on a moment. But that one is the one that Mr. Jammal actually walked us through.

THE PRESIDENT: So it wasn't deleted?
MR. LeCLAIR: That's correct.

THE PRESIDENT: Okay. That's all I wanted to hear. Thank you.

CMD 18-H2.69
Written submission from Paula Tippett

MR. LEBLANC: The next submission is from Paula Tippett, CMD 18-H2.69.

Any questions? No.

CMD 18-H2.70
Written submission from Francis Style

MR. LEBLANC: The next submission is from Francis Style, CMD 18-H2.70.

CMD 18-H2.71
Written submission from Kathleen Eisner

MR. LEBLANC: The next submission is from Kathleen Eisner, CMD 18-H2.71.

THE PRESIDENT: So we hear a lot of argument about the 10-year license. That doesn't allow the
public to intervene until 2028 as the next opportunity. I think CNSC will have to have a better explanation about what the annual report does during the 10 years, because I don't think there's an appreciation about the ability to intervene on an annual basis.

**MS TADROS:** Haidy Tadros for the record.

That is correct, sir. That's what we've been hearing as well. And I think one of the last interventions brought reference more to the opportunity to come before the Commission in an oral proceeding, if you will, as opposed to written proceeding, which we do allow for in our Regulatory Oversight Report in terms of written interventions.

The other concerns that we've been hearing with regards to the licence term is the link between the contract and the licence term. And again we heard that from the CNSC's perspective there is no concern there because basically there is no link to the contract. Regardless of who the contractor is, CNL remains the licensee, and according the programs they have in place and the performance that has been demonstrated we are confident that they will continue to meet regulatory requirements.

And we have regular opportunities to come before the Commission, as we had done in 2016. When a
program becomes less than satisfactory, we come and provide details on what the licensee is doing and what CNSC Staff's oversight activities are to ensure that the performance becomes a satisfactory performance, such as the case for fitness for service.

So there are multiple opportunities for reporting and multiple opportunities for the public to get engaged. But, again, I think most of the comments were more from an oral presentation perspective.

MEMBER SEELEY: Maybe one more questions on the annual process.

So there's an annual review, with an opportunity to participate in that meeting; is that correct?

MS TADROS: Haidy Tadros for the record. That is correct.

MEMBER SEELEY: So that annual meeting is held where?

MS TADROS: Haidy Tadros for the record. This would be our Regulatory Oversight Report. And the Commission finds it favourable to go to the communities at times. We've regularly looked to go into the communities. For example, in December of 2016 we were in the community of Port Hope to present two
Regulatory Oversight Reports at that time. Some of them are also done in Ottawa at the headquarters. So that would depend on where the Commission decides.

MEMBER SEELEY: Thank you.

THE PRESIDENT: Go ahead.

MR. COX: David Cox for the record.

Just to provide CNL's perspective on that, there's a lot of effort that goes in on annual basis to preparing an Annual Safety Report, which categorizes our performance against all of the 14 safety and control areas, plus other dimensions. And we also generate a very detailed Environmental Monitoring Report on an annual basis, and that comprehensive set of information is what forms the basis for the regulatory oversight.

So there's a lot of information provided by the licensee on an annual basis and I wanted to make that clarification.

THE PRESIDENT: Since the Commission has been moving more and more to a 10-year licence we hear from the public that they want the oral interaction, so the Commission has been thinking about, you know, given within a 10-year licence maybe to come back to the community with some oral presentations. So it's up to the Commission to decide, because it can be done in writing or in an oral
presentation.

Particularly in your case, I suspect, because of some of the decommissioning plans, there is going to be a lot of interaction in the public.

**MS TADROS:** Haidy Tadros for the record.

I was reminded by Mr. Jammal we also have the opportunity for the public to come before the Commission using the participant funding program as well. So there are a lot of mechanisms that invite and open the proceedings to the public for further engagement.

**MEMBER McEWAN:** Again there's an interesting comment in the second-to-last paragraph:

"There has been, at times, an uneasy relationship with our neighbours, AECL and CRL. There is no relationship yet with CNL."

As a new organization running a pre-existing laboratory, with a lot of relations, a lot of history with the local communities, how do you, as an organization, go about building a new relationship and strengthening that type of a relationship?

**MR. COX:** Dave Cox for the record.

I'd just like to clarify the question.

**MEMBER McEWAN:** So the question is: the
intervenor is saying, I think, that there's a long history between the citizens of Renfrew County and CRL and AECL. CNL is now a new organization that has come into that long history. How do you go about building a relationship, that is effectively new, on an old structure?

MR. COX: Thank you for that clarification. David Cox for the record.

We've put a lot of effort into establishing the identity of CNL, which builds upon the pre-existing recognition that went with AECL. And so a lot of work's been done in the local communities and with a wide range of stakeholders, and I'll ask Pat Quinn to provide some elaboration on that.

MR. QUINN: Hello, Pat Quinn for the record.

This is a good question. We work very hard at our public information program and ensuring, you know, we do have a great foundation and at the transition to the GoCo we worked hard to introduce the concept, but also introduce the new members of the executive team, because that was the biggest change within the community.

And so as I've mentioned before, we had been making presentations to councils, and continue to do so. We also have members of the executive team directly
involved in our community meetings, so if we're -- like our meetings with our Environmental Stewardship Council. The members of the council are able to meet and be with our executives during the day and get to know them as individuals.

We also look for opportunities, though, to have members of the executive participate in communities activities. And so it's not all about work and sometimes it can be Canada Day celebrations, and being a participant in that. A simple, again, present in the streets, having a coffee, meeting people, being in the paper one week, at a Canada Day celebration being on the main street the next week, and having a chat about that picture that was in the North Renfrew Times.

So we really work hard at having the executive participate as best as possible in events. With one of the events we attempted to sponsor for the City of Pembroke and the Municipality of Petawawa, which was Paddle Fest, we had members of our executive help with the, you know, ceremonies around that.

Again, Kathy McCarthy talked about being present at the Science Fair. This is again an opportunity to meet educators in a fun but an important activity in the field.
So it's about finding those opportunities.

**MEMBER McEWAN:** So if I came back in a year say, and I was talking to this intervenor, what would you regard a marker of success in moving her view that you were good neighbours and that it was actually good to have you in the community?

**MR. QUINN:** One of the things that I would like to hear from that intervenor is that they still recognize us as very much the organization that we were, in the sense of being that good neighbour. Personally, I've worked there for 27 years, you know, and as we've heard this evening many of the employees remain.

I'd also, though, like them to be able to say that "I am aware of our president and CEO or our vice-president of decommissioning, I've had the opportunity to meet them through public project activities and I'm getting a better sense of the organization."

We don't leave it just to those personal engagements though. We've talked a little bit about our website that's, you know, kind of an entry point into the organization, but also a newsletter like Contact. We've mentioned that. That goes into homes on the quarter, to 50,000 homes in the Pontiac and Renfrew County. And so this is an opportunity again to profile the organization,
bring people up to date on the activities that we have under way, and also to, you know, introduce individuals that are new to the organization.

MEMBER McEWAN: Okay, thank you.

CMD 18-H2.72

Written submission from Allan S. Taylor

MR. LEBLANC: The next submission is from Allan S. Taylor, CMD 18-H2.72.

CMD 18-H2.73

Written submission from the City of Pembroke

MR. LEBLANC: The next submission is from the City of Pembroke, CMD 18-H.73.

CMD 18-H2.74

Written submission from

Upper Ottawa Valley Chamber of Commerce

MR. LEBLANC: The next submission is from the Upper Ottawa Valley Chamber of Commerce, CMD 18-H2.74.
Written submission from Emma Manchester

MR. LEBLANC: The next submission is from Emma Manchester, CMD 18-H2-75.
Yes.

MR. DEMETER: So this is a recurring theme. One of the comments that the intervenor makes is proximity to the river, and that was discussed in one of the other teleconference intervenors. And I think staff reiterated, and I'll let them speak for themselves, but the concept that, irrespective of where the facility is located, the safety case has to be made, and that the environment and people have to remain safe, and I just would like maybe staff to respond to that particular intervenor that it's not the proximity to the river that's the issue, it's the safety case.

MS TADROS: Haidy Tadros for the record.
I think that says it perfectly. The safety case is the case --

MR. DEMETER: Sorry.

--- Laughter / Rires

MS TADROS: -- and maybe the only thing to provide a bit more assurances on with regards to the safety
case is the environmental and monitoring program that has existed at CNL for many years. This is probably one of the most measured, most sampled locations that we have. We have our independent environmental monitoring campaigns, that are ongoing, and we have results and trends and data that we look to and methodologies and models that are predictive of protection of the environment and the people.

So you are very right it's all about the safety case, irrespective of what facility or activity is being put on there.

Thank you.

MEMBER SEELEY: I have a question also. It's a reoccurring theme about the waste management activities.

So the intervenor refers to properly segregating, labelling, packaging and having a complete inventory. I believe these activities are happening, but just as an example about maybe putting it in real terms, packaging 382,000 m$^3$ of dirt, okay, would be quite a chore.

So, I think, you know, they're maybe getting too simplistic about what it is they're dealing with, but we're dealing with a large site, a large volume of materials, but it would be worthwhile having maybe CNL or CNSC just comment about those types of activities and
what actually is done on the site for the waste management process.

**MR. COX:** So, Dave Cox for the record.

We've got in place all of the elements of the waste management program that the intervenors noted with a lot of emphasis on -- well, all the key elements, and I'll ask Kurt Kehler to give us the details of our program.

**MR. KEHLER:** Kurt Kehler for the record.

At the site we have a comprehensive set of programs to manage the waste. We do characterize our waste, segregate the waste, divide it into the streams, the categories where we store them properly whether it be low-level, intermediate level, you know, or clean.

We actually decontaminate and release most of our waste materials as clean, the large majority from the site, we check those before they leave the site.

And so, all the topics that are covered there, we have a robust set of programs and procedures in place to accomplish all those.

**MEMBER SEELEY:** Thank you.
CMD 18-H2.76
Written submission from
Renfrew County District School Board

MR. LEBLANC: The next submission is from
the Renfrew County District School Board, CMD 18-H2.76.

CMD 18-H2.77
Written submission from Pembroke Regional Hospital

MR. LEBLANC: The next submission is from
the Pembroke Regional Hospital, CMD 18-H2.77.

CMD 18-H2.78
Written submission from the
Algonquin College Pembroke Waterfront Campus

MR. LEBLANC: The next submission is from
the Algonquin College Pembroke Waterfront Campus, CMD
18-H2.78.
CMD 18-H2.79

Written submission from the
Chalk River Professional Employees Group

MR. LEBLANC: The next submission is from the Chalk River Professional Employees Group, CMD 18-H2.79.

CMD 18-H2.80

Written submission from the United Steelworkers (USW)

MR. LEBLANC: The next submission is from the United Steelworkers (USW), CMD 18-H2.80.

CMD 18-H2.81

Written submission from Nordion (Canada) Inc.

MR. LEBLANC: The next submission is from Nordion (Canada) Inc., CMD 18-H2.81.

MR. DEMETER: This is just a curiosity of -- given Nordion's historic activities within the medical isotope industry, what relationship does CNL have with Nordion now and what's their sort of status, are they an external agency, have they been absorbed, are they -- I'm just curious.
MR. COX: Dave Cox for the record.

Nordion is a separate company. We supply Nordion still today with an ongoing supply of medical isotopes, but the suite of isotopes that we provide them with now is smaller than what it used to be. We used to provide them with moly, technetium, which we no longer do, but we still supply them with cobalt.

And so, you know, they're an active, independent company. We have a commercial relationship with them.

THE PRESIDENT: But they specifically -- that's why we're intrigued by its potential innovative from Molybdenum-99 target and a new medical isotope. What does that mean?

Are you still in --

MR. COX: David Cox for the record.

I think that's a reference to proposed work that's under review with Nordion and it's not at this point a proposal that we're bringing forward.

THE PRESIDENT: That's a very cryptic answer.

--- Laughter / Rires

THE PRESIDENT: Go ahead, Dr. McEwan.

MEMBER McEWAN: I'm just going to broaden
a little bit from Nordion, if I may, because I want to avoid specific companies.

I mean, as you build your research program in systemic radiation therapy with alpha particles, I'm interested that you appear to be overtly excluding beta particles, but presumably that is something that you would be doing -- let me ask the question.

Is that something you do internally on your own, or would you be building relationships with academia, with universities, with industry?

MS McCARTHY: Kathy McCarthy for the record.

We do work in the health field both for the federal government, so there's some work that we do that's of interest of the Government of Canada, and then we also do partner with commercial partners, for example, even on the targeted alpha therapy that's one where we would have a commercial partner.

We're not limited to alpha compounds, you're right that there are other compounds as well, other materials as well, beta therapies, and we are not -- what we would do is partner with a commercial partner on that sort of thing.

MEMBER McEWAN: So, you don't see
partnerships with academia as important in building that as well, or is it only commercial?

MS McCARTHY: Yes, sorry, Kathy McCarthy for the record.

Yes, we do partner with academic institutions as well in a lot of the projects that we do, we do partner with academic institutions. That's important, again from the pipeline as well as out-of-the-box thinking and they have capabilities a lot of times that are very complementary to ours.

CMD 18-H2.82

Written submission from Valerie Needham

MR. LEBLANC: The next submission is from Valerie Needham, CMD 18-H2.82.

THE PRESIDENT: I think staff probably would want to comment on item number 5, second page.

MS TADROS: Haidy Tadros for the record.

So, we would not agree with that statement. I believe -- we believe we have demonstrated our independence through the work that we do with regards to the regulatory oversight activities that is conducted on a day-to-day basis.
We do have a site office. The site office staff are inspectors. And I'll pass the mic to Mr. Jean LeClair, he's the Director of the group. Inspection plans are planned from headquarters and the site office execute those plans. So, having a site office should in no way be representative of being captured.

So, perhaps I'll ask Mr. Jean LeClair to elaborate.

**MR. LECLAIR:** Perhaps it's worth mentioning that CNSC has at its disposal almost 450 employees in various technical fields that are hired independently by the CNSC.

So, I think it's important to mention that we don't -- it's not just a matter of -- a site office is an important aspect, but the reality is also that we have several staff available who are directly involved in providing regulatory oversight of CNL activities.

So, one, I would re-emphasize we definitely are not captured, and I should also mention that there's so many people involved across the CNSC that we're all taking care of each other to make sure that we maintain our independence and that we ensure proper regulatory oversight.

**MR. JAMMAL:** Ramzi Jammal for the record.
Just to complement my colleagues, the CNSC undergoes international review. We are obligated by the treaty to present, and we get challenged with respect to our independence. When I say challenged with respect to how are we complying with the treaties, legal treaty that demonstrate time after time the independence of the CNSC.

We underwent international reviews, IRRS Mission 2009, follow-up 2011. We just had a specific mission by international experts, independent from each other, actually they come in as a team. We had an IPASS which is a service for review of security and every time they look and verify the independence and the functionality of the CNSC. To date they have not shown anything. As a matter of fact, the CNSC independence is a role model around the world.

THE PRESIDENT: Thank you.

CMD 18-H2.83

Written submission from Marilee DeLombard and Robert Wills

MR. LEBLANC: The next submission is from Marilee DeLombard and Robert Wills, CMD 18-H2.83.
CMD 18-H2.86

Written submission from Linda Spagnolo

    MR. LEBLANC: The next submission is from Linda Spagnolo, CMD 18-H2.86.

    MR. LEBLANC: Any questions?

CMD 18-H2.87

Written submission from the Iroquois Caucus

    MR. LEBLANC: And the last submission is from the Iroquois Caucus, mémoire du Caucus Iroquois, CMD 18-H2.87.

    MEMBER SOLIMAN: I have a question.

    MR. LEBLANC: Oh, you have a question? Thank you.

    MEMBER SOLIMAN: The intervenor is mentioning the Fissile Solution Storage Tank, FISST.

    What this tank is made of? What is the material of this tank; is it concrete or stainless steel or whatever? What is the content of that tank?

    And also, during transportation of the tank content from CRL to United States, what means is being taken to protect health, safety and environment, also the
public and the First Nation territory?

**MR. LECLAIR:** Jean LeClair for the record. I'll begin by mentioning that the entire project, we have a fair amount of information available on the website specifically associated with this particular project.

All the shipments of that material is done in certified packages. Again, that information and the whole process that we went through with regards to certifying the packages was actually put out for public comment and that information is available on the website.

Speaking specifically with regards to the materials of the tank and the contents of the tank, while I could answer that question, perhaps CNL would be in a better position to elaborate a bit further on those materials.

But I do want to mention that CNSC has provided quite extensive regulatory oversight and perhaps I should take the opportunity to mention that we even recently conducted a surprise inspection at CNL with regards to this particular project.

So, we do -- normally our inspections are all planned and they're announced in advance, but we took the opportunity to actually come in and do an unannounced
inspection to make sure that they were in full compliance with their requirements with regards to packaging and transportation and security and we actually had a multi-disciplinary inspection team.

If the Commission's interested in learning a bit more about that, we do have a site inspector here who was actually involved, if you're interested in hearing a bit more about that.

**MR. COX:** David Cox, for the record.

The tank or tanks, actually, it's double walled stainless steel tanks. What it contains is a solution that was generated during the early days of Molybdenum isotope production, so it contains fissile material and fission products in an acidic solution. And this material is the subject of the repatriation program which is returning the fissile material to the United States.

If you require further information on the status of that, then I would defer to Kirk Kehler to give that information.

**MEMBER SOLIMAN:** You said that it's made of stainless steel; right?

**MR. COX:** That is correct. Double wall stainless steel.
MEMBER SOLIMAN: Okay. How often, then, you check ductility of the material? Because radioactive material inside will continuously change the ductility of the material. Could cause cracks and all these things.

MR. COX: David Cox, for the record.

I would have to confirm back as to exact frequency, but the tank, because of its special nature, is subject to the inspection programs that are designed in order to confirm its integrity.

The exact frequency, though, I would need to go back to get that information.

Suffice it to say, though, that it's subject to inspection to confirm its integrity.

MEMBER DEMETER: So I just wanted to, sort of a lead-up to this, the intervenor feels that -- and they've specifically targeted this to CNSC, but it may be CNL as well, that -- you know, and you've confirmed that what's in the tank is sort of spent fuel with fissile material uranyl nitrate. Not spent fuel.

THE PRESIDENT: Highly enriched.

MEMBER DEMETER: Highly enriched uranyl nitrate liquid and fissile material. Are there -- okay.

So it's not the actual pellets from the highly enriched uranium that you used as -- okay.
So anyways, they're looking at what they feel they've been told from an emergency response point of view, that it's only highly enriched uranyl nitrate liquid, and not plus or minus fissile material. So I'm not sure where they got that, and they're specifically targeting CNSC as saying this is just this information, but it's a bit broader.

So maybe you can comment on that.

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

Again, I'd like to mention that, actually, on the web site it actually talks about the materials and certainly it expands a bit more. I believe the quantity says one percent of it is uranium and then lists off the other elements.

So this information is available.

With regards to responders, there's a whole program that's in place in order to ensure that emergency responders are properly trained under the *Transportation of Dangerous Goods Act* under section 7 for radioactive materials.

So there's a whole program that's in place to ensure that emergency responders are properly trained in order to be able to adequately respond to an accident, a
transportation-related accident that would involve radioactive materials.

THE PRESIDENT: No, no, no. Just to add, it is my understanding -- correct me if I'm wrong -- that staff actually wrote to all the first responders along the various routes and that everybody's fully aware because they wrote to us and everybody knows about this particular thing.

So I have no idea where this came from.

MR. LECLAIR: I would have to -- because I know in Ottawa we -- our transportation specialists are not online at this moment, so I would not want to mislead the Commission.

THE PRESIDENT: Mr. Jammal is going to help you here, I think.

MR. LECLAIR: Thank you.

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

All of the planned emergency response for the transport of the packaging requires to have an ERAP, as it was mentioned, under the transportation of dangerous goods requirement for Transport Canada.

In relation to the ERAP, our specialists in emergency management --
THE PRESIDENT: What is ERAP?

MR. JAMMAL: Oh, the Emergency Response Action Plan.

THE PRESIDENT: Thank you.

MR. JAMMAL: Thank you for reminding me not to use acronyms.

And that is a requirement, so that, the trucks will have to have in place.

In addition to the certification, we licence the route by which the transport takes place. Of course, it's prescribed information for secure reasons.

In addition, we reached out to first responders, city first responders or small community first responders, that, we provided them with the information.

I, myself, met with an elected Member of Parliament which his jurisdiction was seeking for information, and we did provide them with information. As a matter of fact, our staff went and met with the first responders and they were satisfied with the arrangements in place and the assistance that will be provided to them.

THE PRESIDENT: Thank you.

I just have a question. Did CNSC reach out to this group?

I don't -- I didn't think -- they weren't
on the list of indigenous community who reached out. Should you or are they nearby? What's the interest there and what's the proximity to the site?

**MS TADROS:** Haidy Tadros, for the record.

So we'll ask Ms Clare Cattrysse to take those questions.

**MS CATTRYSSE:** Clare Cattrysse, for the record.

No, we haven't been reaching out to the Iroquois Caucus. I mean, they are situated along the Great Lakes, but any communities or groups that have interest in the project, we'll definitely be responsive and hear more about what their concerns are.

But in terms of what activities are taking place at the site, we are concerned with the rights holders and the people in the communities around the site that have interests, and that's where we've kept our focus.

**THE PRESIDENT:** So they're not near --

**MS CATTRYSSE:** No, they are not.

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

Any other?

Well, believe it or not, this concludes the day. And we will resume tomorrow at 8:30.
Thank you for your patience.

--- Whereupon the hearing adjourned at 9:55 p.m.,
to resume on Wednesday, January 24, 2018
at 8:30 a.m. / L'audience est adjournée à 21 h 55
pour reprendre le mercredi 24 janvier 2018
à 8 h 30