Canadian Nuclear Safety Commission

Commission canadienne de sûreté nucléaire

Public hearing

Audience publique

June 10th, 2021

Le 10 juin 2021

Public Hearing Room
14th floor
280 Slater Street
Ottawa, Ontario

via videoconference

Salle des audiences publiques
14e étage
280, rue Slater
Ottawa (Ontario)

par vidéoconférence

Commission Members present

Ms. Rumina Velshi
Dr. Timothy Berube
Dr. Marcel Lacroix

Commissaires présents

Mme Rumina Velshi
M. Timothy Berube
M. Marcel Lacroix

Secretary:

Mr. Marc Leblanc

Secrétaire:

Me Marc Leblanc

Senior General Counsel:

Ms. Lisa Thiele

Avocate-générale principale :

Me Lisa Thiele

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by videoconference / par vidéoconférence

--- Upon commencing on Thursday, May 10, 2021
at 9:00 a.m. / L'audience débute le jeudi
10 mai 2021 à 9 h 00

Opening remarks

THE PRESIDENT: Good morning and welcome to the public hearing of the Canadian Nuclear Safety Commission.

Mon nom est Rumina Velshi. Je suis la présidente de la Commission canadienne de sûreté nucléaire.

I would like to begin by recognizing that our participants today are located in many different parts of the country. I will pause for a few seconds in silence so that each of us can acknowledge the Treaty and/or traditional territory for our respective locations. Please take this time to provide your gratitude and acknowledgment for the land. As well, I would like to acknowledge that the proposed site for the Darlington New Nuclear Project located within the overall Darlington site lies on the traditional territory of the Mississaugas, the Wendat, the Anishinabek Nation and the Métis Nation of Ontario, as well as on the territory covered by the Williams Treaties.

Je vous souhaite la bienvenue and welcome

to all those joining us via Zoom or webcast.

Under my authority to do so pursuant to section 22 of the *Nuclear Safety and Control Act*, I have established a three-member panel of the Commission to conduct this licence renewal hearing. I will preside over the hearing, and I have with me on the panel Dr. Marcel Lacroix and Dr. Timothy Berube, who are, like me, participating remotely for this virtual hearing.

Ms. Lisa Thiele, Senior General Counsel to the Commission, and Marc Leblanc, Commission Secretary, are also joining us also remotely.

Before I turn the floor over to the Secretary, I would like to advise hearing participants that I have considered the issue of whether I ought to preside over this renewal hearing.

Impartial decision making is a hallmark of a fair process and a requirement of impartiality is that there be no reasonable apprehension of bias on the part of the decision maker.

No participant in this hearing has asked that I address this issue or recuse myself and I have no doubt that I approach this matter with an open mind.

However, given my prior OPP employment many years ago, including some involvement with the Darlington site, I took the proactive step of considering

the issue of whether there could be a reasonable apprehension of bias at this time with respect to my involvement in this licensing matter.

After careful consideration, which included seeking independent legal advice from an expert in administrative law, I determined that there was no basis on which to recuse myself from presiding over this renewal hearing and that there could be no reasonable perception of a lack of impartiality on my part as a result of my past involvement with OPG.

In this respect and for transparency, I would like the record to reflect a letter which relays the conclusions reached on this matter by Professor Paul Daly, University Research Chair in Administrative Law and Governance at the University of Ottawa.

Marc, please give the letter a CMD number and place it on the public hearing record. Thank you.

With that, I'll turn the floor to the Commission Secretary for some opening remarks.

Marc, over to you.

MR. LEBLANC: Merci, Madame la Présidente. And this letter will be placed on the record today.

Bonjour, Mesdames et Messieurs. Bienvenue à cette audience publique de la Commission canadienne de sûreté nucléaire.

The Canadian Nuclear Safety Commission is about to start the public hearing on the application by Ontario Power Generation, OPG, for the renewal of the site preparation licence for Darlington New Nuclear Project.

During today's business, we have simultaneous interpretation. Please keep the pace of your speech relatively slow so that the interpreters have a chance to keep up.

To make the transcripts as meaningful as possible, we would like everyone to identify themselves before speaking.

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

As a courtesy to others, please mute yourself if you are not presenting or answering a question.

As usual, the President will be coordinating the questions. During the question period, if you wish to provide an answer or add a comment, please use the Raise Hand function.

The agenda was approved yesterday at the start of the hearing on BWXT Medical's licence application.

The initial Notice of Public Hearing and Participant Funding on this matter was published on October

15, 2020. Two revisions were posted to modify the deadline for filing of Commission Member Documents and for adding June 11 to the dates of hearing.

The public was invited to participate in writing and by making oral presentations. May 3, 2021 was the deadline set for filing by intervenors. The Commission received 63 requests for intervention, one was filed after the deadline and was refused.

May 26 was the deadline for filing of supplementary information. I note that supplementary submissions and presentations have been filed by CNSC Staff, OPG and several intervenors.

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

We will first hear the presentations by OPG and CNSC Staff.

Fifteen intervenors are scheduled to present orally today. While the presentations are limited to 10 minutes, Commission Members will have the opportunity to ask questions after each presentation. There is no time limit ascribed for the question period.

The written submissions will be addressed during the rounds of questions at the end of the hearing.

I want to note that representatives from different provincial and federal governmental departments are joining us remotely, to be available for questions.

President Velshi.

THE PRESIDENT: Thank you, Marc. As we begin the hearing to consider OPG's application for the renewal of the licence to prepare the site for the Darlington New Nuclear Project, I wish to be clear about the matter that is before the Commission. That is, the Commission has before it an application to renew, on substantially the same terms as in its existing licence, the authorization to prepare the site that it has held since August 2012.

Many submissions in this renewal proceeding address the relative merits of different reactor technologies, including SMR technologies, and whether and which of those technologies may or may not fit within the licensing basis of the site preparation licence, and within the bounds of the environmental assessment that was conducted for this project.

However, the licensee has not chosen a reactor technology, and this hearing is not addressing technology choice. Neither is it the role of the Commission to determine or evaluate Ontario's energy mix choices.

The Commission is a safety regulator, and since OPG has applied to renew the site preparation licence for the DNNP, the Commission will assess the continued suitability of the site in accordance with regulatory requirements, and will assess the adequacy of the information before it, and the adequacy of the proposed licence and its conditions, for the activities that would be authorized under a renewed site preparation licence.

Once OPG has made a choice of technology at a future date, there will be other steps that will be necessary, including the determination of whether, from a regulatory perspective, that choice fits within the licensing basis, within the bounding parameters of the EA, and how this will be managed going forward.

The Commission therefore expects that participants presenting orally will focus on the matter that is before the Commission in this hearing.

I would like to start the hearing by calling on the presentation from Ontario Power Generation, as outlined in CMDs 21-H4.1, 21-H4.1A and 21-H4.1B.

I will turn to Mr. Dominique Minière for this presentation.

Mr. Minière, the floor is yours

CMD 21-H4.1/21-H4.1A/ 21-H4.1B

Oral presentation by Ontario Power Generation

MR. MINIÈRE: Bonjour. For the record, my name is Dominique Minière, I am the Chief Strategic Officer at Ontario Power Generation. And thank you for this opportunity to present to you today the OPG applications for renewal of the site preparation licence for the Darlington New Nuclear Project site.

I have with me at this hearing today several member of the OPG team, including: Mark Knutson who holds the site preparation licence on behalf of OPG; Robin Manley, the Vice-President of New Nuclear Development; Carol Gregoris, the Darlington New Nuclear Project Director; and, other members of the OPG team are available to answer all your questions.

I wish to acknowledge that the Darlington site we are talking about today shown in the photos in several of these slides is a shared traditional and treaty territory of the Chippewas and the Mississaugas, and the Anishinabek Nation.

Moreover, as stated by OPG's CO, Ken Hartwick, OPG honours and mourns the loss of 215 innocent children whose remains were discovered at the former Kamloops Indian Residential School.

There are thousands of children, some yet to be found, who died while attending residential schools across our nation.

Like other Canadians, we are shaken by this discovery and we are once again reminded of the intergenerational trauma that Indigenous peoples continue to experience as a result of the Canadian residential school system.

We sincerely hope their families and communities can begin to find peace and healing, and that Indigenous peoples receive the truth and reconciliation they rightly deserve.

I would like also to recognize the many Canadians; frontline workers, farm workers, health care workers, energy workers, and others who have work through this COVID pandemic for more than 15 months now keeping the food on our plates, looking after our sick, and keeping the lights on. We salute them and thank them for their dedication.

Today the OPG team will share another view of the project and our commitment to environment, Indigenous engagement, and public communications. We will give you work done to demonstrate the site remains suitable for New Nuclear Power and we will outline our vision for the site.

Ontario Power Generation is the leading supplier of electricity to the power grid in Ontario. We provide valuable low-cost power for nuclear stations at Pickering and Darlington, our hydroelectric facilities, and solar generating stations and biomass generating stations, and through our Atura subsidiary several natural gas plants.

We have proudly looked after the people of Ontario's electricity generation needs for decades, and look forward to doing so for many decades to come. We have done so through safe and reliable operating performance protecting the environment, protecting the people of Ontario, and protecting our workers.

We have achieved many remarkable feats at our existing nuclear stations over the years, far too numerous to list. Last year at Darlington we set a world record for the longest run between outages for a nuclear power plant in the world, a testament to the excellence of our operating and maintenance, our engineering and our staff's professionalism.

Both our Darlington and Pickering stations have received exemplary ratings from the World Association of Nuclear Operators. In fact, Pickering has run better over the last couple of years than ever before.

Finally, for the Darlington refurbishment

project, we have completed the first four units, exemplifying our commitment to complete the project safely, on time, and on budget, but most importantly, safely for the people of Ontario. All of these things demonstrate the diligence and passion for excellence with which we fulfill our responsibilities to the people of Ontario.

But we know OPG's responsibility is more than just excellence in operations. It's also excellence in things like equity, diversity and inclusion as well. In the years to come we are outlining clear goals to help OPG become not only one of Canada's best diversity employers, but a global leader in equity, diversity and inclusion practices by 2030.

We remain committed to sustaining and executing our excellence standards for our current and any future nuclear generating facility we may be granted the opportunity to develop, build and operate, including the activities under the site preparation licence we are discussing today.

Some people may ask, why has OPG decided to move ahead with New Nuclear now? I will answer that. First, describing why nuclear power is important to Ontario and to the world.

Worldwide we are facing a climate change crisis. Strong actions are needed to change the way we

produce power. Everyone in the world needs power to live and the demand for power will only grow as populations increase and as people demand improvement in their standard of living. We will need to mobilize every non-emitting power source, that includes: hydro, renewables, nuclear, carbon capture and storage.

But the evidence is clear, as stated by experts like the International Energy Agency, without nuclear there is no path to bringing the world's greenhouse gas emissions to zero by 2050.

Advancement of new generation capacity at the Darlington site is a form of small modular reactors, SMRs, which support OPG's Climate Change Action Plan and company-wide target to achieve net-zero emissions by 2040 and to enable others to reach net-zero by 2050.

Both the Federal and Ontario Provincial Governments have signalled their support for the continued use of nuclear energy in Canada, and OPG's announcement that we'll resume project activities for the Darlington New Nuclear Project.

A key step to realizing this vision is the a successful renewal of the power reactor site preparation licence we are seeking today.

More and more nuclear power is being recognized for the essential role it plays today and will

continue to play in the future to provide reliable, baseload electricity and combat climate change.

The Premiers of Ontario, Saskatchewan, Alberta and New Brunswick have signed a Memorandum of Understanding acknowledging the role of nuclear power as a clean energy source that is essential to fighting climate change and committing to act together to deploy innovative SMR technology.

The provinces are taking a pan-Canadian approach working together. They have issued a feasibility study, and next step is a strategic plan. And I can tell you that the single most important element in this plan and the opportunity for Canada to reduce its emissions is for someone to go first, someone needs to build the next nuclear plant.

OPG is the only Canadian company with this capability. Excellence in operations, see our nuclear plant. Excellence in projects, see Darlington refurbishment. Indigenous partnerships, look at our examples in our renewable generation fleet. And the only site in Canada with an improved New Nuclear environmental assessment and CNSC site preparation licence.

These attributes enable OPG to do the first-of-a-kind development of New Nuclear Power in Canada since the 1990s. The first-of-a-kind development at other,

particularly in Saskatchewan, maybe in Alberta, maybe elsewhere in Ontario, may choose to duplicate. And in so doing, enable a step-change change in real, practical decarbonization of the electricity sector and maybe the heavy industry resource sectors as well.

Without New Nuclear at Darlington, the opportunity for Canada to decarbonize is negatively impacted. It would take Canada longer and cost more. Ultimately, this is why we are moving ahead with new nuclear.

So what exactly is OPG planning for the Darlington site?

We have resumed planning activities for the Darlington New Nuclear Project to help prepare for tomorrow's energy needs. OPG made this announcement in November of last year when we were joined at the Darlington site by the Ministry of Energy, Northern Development and Mines and Indigenous Affairs and other local politicians.

As more sectors of Ontario's economy, such as transportation, move towards electrification there will be a growing demand for OPG's clean power. We are preparing to meet these demands.

OPG's advancing work for additional nuclear capacity at the Darlington site towards the end of this decade to provide low-carbon reliable energy to meet

Ontario's energy demand and to support Ontario and Canada's climate change goals.

We are currently evaluating options that will support a sound business case, including technologies that fit with the existing accepted EA; that have advanced safety features that can enable the potential for an emergency planning zone and station boundary; that are the right size for maximum opportunities across Canada, a plant for approximately 300 MW output; that meet our targeted timeline to support a pan-Canadian fleet; and that support Canadian nuclear industry jobs and our nuclear supply chain.

I will now turn it over to Mark Knutson.

MR. KNUTSON: Good morning, Commissioners and members of the public watching online.

For the record, my name is Mark Knutson, I am the Chief Nuclear Engineer and the Senior Vice-President of Enterprise Engineering of Ontario Power Generation.

In addition, I am accountable for the Darlington New Nuclear site preparation licence and OPG's activities and commitments under that licence.

Dominque has already described to you today the importance of nuclear energy to the world and to Canada. I will just add a few elements to that.

First, OPG took the largest single climate

change action in the world, at the time, by closing Ontario's coal stations about a decade ago. That was possible because of Ontario's diverse, clean power portfolio which includes, hydro, renewables and nuclear. Nuclear produces about half the electricity in Ontario on any given day.

In both our own and independent forecast project a large and growing need for more clean electricity in Ontario by the end of this decade, and especially beyond. To achieve this clean energy future, it is clear the most important part of the puzzle is nuclear energy. If we want to be successful in our goal of low-carbon future comprised of variable renewables, SMRs will serve as a dynamic source of baseload for the people of Ontario.

By comparison to gas, a 300-megawatt small modular reactor would produce 1 million tons per year less carbon.

OPG's climate change plan has numerous elements to it. One of the most significant of, which is SMRs, but another is electrification. Without electrification of Ontario's transportation sector and our home and business heating sectors, among others, Ontario can't reach net-zero. But for the electrification of these sectors to be possible we will need Gigawatts of more stable baseload generation, and that includes nuclear.

As Saskatchewan moves to close its coal plants it will build some gas plants along with renewables and transmission -- and transmission to obtain more hydro power, but Saskatchewan cannot decarbonize as far or as quickly without more baseload power. That is, it can't do it without nuclear.

This is why the Saskatchewan government is so strongly supportive of the provincial plan for the future SMRs. However, Saskatchewan is not currently a nuclear power jurisdiction. They need someone else to go first.

OPG's climate change plan includes ways to enable others to join us on our path to achieve a clean energy future for Canada, which includes Saskatchewan. And for that, we need to proceed and begin our site preparation work on a new nuclear project.

Therefore, this Site Preparation Licence is key to enabling new nuclear, not only in Ontario, but across Canada, to aid our fight against climate change.

Next slide, please.

In his introduction, Dominique touched on OPG's record of environmental stewardship, protecting the environment, and ultimately that is what this licence and this application is all about.

OPG believes that operating in an

environmentally sustainable manner is directly connected to the business success and is essential for maintaining or social licence to operate.

In managing our sites we've strived to maintain or enhance significant natural areas associated with species of concern, and I think we have demonstrated that, and I'll give you some examples on the next side.

The next slide, please.

Here are just a few examples of OPG's activities that have garnered recognition from several authorities, including the Gold Certification from the Wildlife Habitat Council, at our Darlington Nuclear Generation Station, the 2019 Sustainability Award from the Greater Oshawa Chamber of Commerce which considers a wide range of criteria, including business uniqueness and environmental efforts.

We have helped to stock more than 300,000 salmon since 2011 as a lead sponsor of the Lake Ontario Atlantic Salmon Restoration Program.

OPG has deployed remotely piloted drones at the Western Waste Management Facility to obtain high resolution photos and videos at the site to map the spread of invasive reed grasses in the Baie du Doré, a provincially significant coastal wetland.

OPG has also worked with partners to plant

more than 8 million native trees and shrubs on approximately 2800 hectares of land across Ontario.

These are just a few examples of how OPG is helping to protect the environment, not just in its nuclear facilities but across the entire province.

Next slide, please.

OPG's capabilities as the industry leader in safe nuclear operations and project management successes continues to be demonstrated by a positive track record of achievements and recognition internationally. Our Darlington Nuclear Generating Station has received excellence ratings in the World Association of Nuclear Operators, WANO, on five successive occasions.

At Pickering, our nuclear plant has received its highest ever exemplary rating from WANO. Now, as we approach to the end of commercial operation of that site my predecessor before I had a turn leading Pickering, Randy Lockwood, coined the phrase, "Our last day will be our best day." That exemplifies the continued improvement that we strive for each and every day. Part of that is the innovation we bring to our operations, whether it is robotic dogs that enable inspections that reduce dose to our workers, or the use of virtual reality to plan our work efficiently and with quality, we're proud to always be finding better ways to operate our plants.

At Darlington, we have successfully rebuilt the Unit 2 reactor from the inside out, safely, on schedule, and on budget. Now we're striving to do that even better on Unit 3, and we're going to take the skills and lessons learned from our refurbishment work and apply them to the Darlington New Nuclear Project.

A year ago, OPG launched the Canadian Centre for Nuclear Sustainability that brings together innovators and leaders in numerous fields related to the nuclear industry to leverage and coordinate Ontario's talents and competencies to make Canada a better -- a world leader in nuclear decommissioning, to advance innovative solutions for nuclear materials, and to minimize the environmental footprint by reducing volumes and diverting and recycling clean materials.

I believe these examples highlight OPG's capability to not only execute the activities allowed by the site preparation licence, but a readiness to undertake activities to support a future new nuclear power generation in a sustainable way.

I am next going to turn over to my colleague Robin Manley who is going to outline the activities we have undertaken to demonstrate to the CNSC that OPG and I, personally, as the Licence Holder have undertaken to demonstrate that the Darlington site remains

suitable for new nuclear development with the Licence and the EA conditions, and how OPG's programs and people will ensure that we continue to be an excellent and competent licensee and operator.

I will now turn it over to Robin Manley.

MR. MANLEY: Good morning. For the record, my name is Robin Manley, I'm the vice-president of New Nuclear Development at Ontario Power Generation responsible for the strategic planning for new nuclear development and SMRs at OPG. I am also supporting Mark Knutson in the Darlington re-licensing activities that we're discussing today.

First, let me note that on this slide you are looking at Darlington New Nuclear Lands from the east with the existing Darlington nuclear station to the west, and with Lake Ontario to the south.

Next side, please.

I am going to briefly recap our licence application request and then provide an overview of the work we have done to support our application, after which I'll turn over to my colleague Carol Gregoris to go into more detail.

The current preparation licence expires on August 17th, 2022 and OPG is requesting renewal of the licence for a 10-year term.

We have applied to renew the licence with no increase in scope, consistent with the existing licence. And in our application, we have demonstrated that we meet all the requirements of the *Nuclear Safety and Control Act*, and the association Regulations; that OPG continues to be qualified to carry on the licensed activities; and, that we make adequate provisions to protect the health, safety and security of persons and the environment.

In addition, in our application we explain how OPG maintains national security and measures required to implement international obligations for the Darlington New Nuclear Project site.

Next slide, please.

As you'll hear from my colleague Carol Gregoris later on, OPG's Licence Basis Documents address the requirements in the regulatory documents, codes and standards, that OPG must meet to be granted this PRSL renewal. I'd like to emphasize that the authorizations OPG is seeking are the same as those the CNSC granted in 2012 and put OPG at the first stage, the site preparation licensing stage, in the CNSC's licensing lifecycle as shown on this slide.

The authorizations are for routine construction activities and all are in line with OPG's existing authorizations under the existing licence.

For the scope of this hearing the important point is that OPG is not seeking permission to build a reactor. Simply put, there is nothing nuclear here. We aren't permitted to build the reactor, do the reactor building excavation or pour nuclear concrete. The authorizations OPG is seeking in this application are simply to conduct activities that will lay the groundwork for a new plant.

As you know, OPG has been considering small modular reactor technology options for deployment at the Darlington site. We've talked about some of the reasons for that focus and we're very excited about how these innovative technologies can serve all Ontarians and Canadian in an efficient and safe way.

We have reviewed intervenors' submissions and we understand that the topic of SMR technology is important to many stakeholders.

We are hopeful we will have the opportunity to address all their questions in detail at a future Licence to Construct hearing. For today, we will outline for the Commission that OPG meets the requirements to prepare the site for any reactor technology that falls within the bounding scenario of the exiting licence.

Next slide, please.

The original site evaluation of the

Darlington New Nuclear Project site confirmed that the site is suitable for construction and operation of a new nuclear power plant, and renewing the Licence requires OPG to demonstrate the original site evaluation conclusion remains valid for current environmental conditions.

To meet this requirement OPG reviewed the original site evaluation against updated environmental baseline data and current standards and regulations to ensure that no natural or human-induced hazards render the site unsuitable for the construction and operation of a new nuclear station.

We submitted for CNSC staff review numerous Licence Renewal Activity Reports, a Site Selection Threat and Risk Assessment update, and an Aggregate Assessment Report to further support the requested 10-year licence renewal. The Aggregate Assessment Report provides an overall assessment to confirm the existing licensing basis remains valid for the next licensing period and any mitigating actions to add to our Commitments Report.

The results demonstrate that the site remains a suitable location for the construction and operation of a new nuclear plant and will not create an unreasonable risk to public, personnel, or the environment.

Next slide, please.

The technical details of the site

evaluation work are provided in our written application and the licensed activity reports. I will summarize the results here.

Overall, some baseline conditions have changed since the original evaluation.

Baseline air quality has generally improved, or has been within the natural variability since the original evaluation.

The terrestrial community, land-based animals and plants, has undergone some changes and exiting mitigation measures remain valid to address any adverse effects.

A new Butternut tree sampling, which is a species at risk, was discovered in 2018 and deemed retainable. OPG has updated a commitment to include the Butternut tree in site planting plans.

The Bank Swallow has become a species at risk since the original application. OPG continues to monitor the Darlington site Bank Swallow colonies annually and continues to explore options for artificial nesting structures. OPG has also continued facilitating the collaboration of research on the decline of Bank Swallows with government, non-governmental organizations and industry. And, other updated baseline data were found consistent with those documented in the original

evaluation.

Given that mitigation and commitments provided from the original assessments are adaptable and scalable to appropriately address identified changes to baseline, the small changes observed in updated baseline data did not alter the original conclusions regarding residual adverse effects of the project.

As I previously mentioned, our studies conclude that the site remains suitable to host a new nuclear plant over its lifespan based on current codes and standards in today's environmental conditions.

Next slide, please.

In support of the site preparation licence renewal, OPG has completed a compliance review of the CNSC REGDOC 1.1.1 on Site Evaluation and Site Preparation for New Reactor Facilities, and reviewed the relevant current codes, standards and practises against OPG's governance, including our nuclear management system and procedures. This is to see if any significant changes have been made in requirements, for example, in terms of safety, protection of the environment, etcetera.

We assessed the applicability and impact of the updated baseline data I just discussed and applied the latest Darlington Probabilistic Safety Assessment hazard screening analysis relative to the site. No changes

were identified that affected the conclusions in the Darlington New Nuclear Project licence basis documentation.

We also identified and addressed any new or updated regulatory documents, codes and standards issued since the original application that apply to site evaluation. This review included a comparison against CSA N286-12 on Management Systems for Nuclear Facilities, and the CSA N288 standards on environmental monitoring, effluent monitoring and environmental risk assessments.

The reviews of the regulatory documents, codes and standards did not identify any significant compliance gaps in the licence-basis documents, therefore, OPG concludes that the Darlington New Nuclear Project licence basis documents remain valid and compliant with current regulatory codes and standards.

Overall, the compliance review against REGDOC 1.1.1 confirmed the conclusions of the original site evaluation remain valid.

I am now going to turn over to Carol Gregoris.

Next slide, please.

MS. GREGORIS: Good morning, Commissioners. For the record, I'm Carol Gregoris, the Project Director of the Darlington New Nuclear Project.

This is a picture of the Darlington New

Nuclear lands and shows its location relative to the existing Darlington Nuclear Generating Station.

The Darlington New Nuclear Project site is located immediately to the east of Darlington's existing station within the current controlled area.

In Dominique's remarks, the emphasized that OPG needs to get on with site preparation activities. For the record, to date, OPG has not initiated any licensed activities under the Site Preparation licence.

In 2013 the Province of Ontario asked us to suspend the planning for new nuclear due to our insufficient forecast in electricity demand, but they also asked us to maintain the site Licence and our commitments. Since then, we have met our Licence commitments and continued to carefully evaluate the needs and the opportunities for new nuclear, including observing the advancements in Small Modular Reactors and participating in Canada's SMR Roadmap.

In early 2019 we began the work of evaluating options for new nuclear technology. We looked at things like, what are the technologies? What are the safety benefits? How soon could it be deployed and what would it cost?

By the fall of 2020 we had enough information that with the support of the provincial

government, the Region of Durham, the Municipality of Clarington, and many others, we decided to begin the formal planning for a Small Modular Reactor deployment at Darlington.

We are working with a number of technology developers to advance engineering and project planning activities and we have started to undertake various commitments under the Licence that are required prior to starting site preparation activities.

OPG has not selected a technology, so at this time we cannot be definitive on a precise footprint or exactly where the facility would be located within the site.

As part of our application, OPG is proposing a new commitment on the layout of structures as recommended in the Aggregate Assessment Report submitted to the CNSC.

As you can see in this indicative roadmap, we are seeking to receive a site preparation licence renewal later this year. We intend to make a decision on technology by the end of the year and begin some early site preparation activities in 2022.

Once we have made a technology decision, we will work towards the submission of a Construction Licence application to the CNSC about the middle of 2022

seeking to have a Construction Licence issued within two years of the application.

For planning purposes, OPG is considering that the new nuclear facility will be in operation by the end of the decade, subject to all the necessary licenses, permits and regulatory approvals.

For OPG and our employees, our jobs are about more than just generating electricity. We take great pride in the positive impact we have in our communities and the future we leave to the next generation, and that's why, as we move through the fight against climate change and as we implement the Darlington New Nuclear Project, we will continue to strive to be a good corporate citizen by being engaged in our communities, communicating early and often, and supporting initiatives that make our community stronger.

Throughout the life is this project we have undertaken extensive engagement with our local community and the public. Most recently in support of this licence renewal we have been busy updating our community and stakeholders on our work, the vision for the Darlington site, and advertising these hearings and encouraging people to take part.

We have proactively contacted OPG stakeholders, groups and individuals who have shown

interest in OPG's operations, our major projects, and our previous licensing activities.

We have met with interested stakeholder groups.

We continue to provide regular updates to local municipal and regional councils.

We hold information sessions with groups who have identified an interest in the project and we host virtual open houses for the local community and general public.

We have included information on the project and this hearing in several editions of our *Neighbours* newsletter delivered to over 250,000 homes around our Pickering and Darlington stations.

And we continue to post up-to-date information on our public website and social media channels.

OPG has been a proud member of the Darlington community for more than 50 years. Our employees don't just work at our stations, they live here, too, and it is important for us to be engaged community members. We will continue to operate and communicate transparently throughout the project and commit to keeping our community and stakeholders up-to-date and informed.

Next slide, please.

In President Velshi's meeting opening and in Dominique's opening remarks, the Darlington lands were acknowledged as the traditional and treaty territory of the Chippewa and Mississauga Anishnawbeg.

Collectively, the First Nations who make up these treaty rights holders are known as the Williams Treaties First Nations. These seven First Nations are illustrated on this slide and include Curve Lake, Hiawatha, Alderville, Scugog Island, Beausoleil, Georgina Island, and Rama First Nations.

We also acknowledge interest in the project from other Indigenous communities including the Metis Nation of Ontario Region 8, and the Mohawks of the Bay of Quinte. In discussion with these communities their interests lie primarily in environmental health and sustainability as well as potential employment opportunities.

As part of the project planning for new nuclear at Darlington it is very important for us to have meaningful engagement with the Williams Treaties First Nations and the other Indigenous communities with interests.

Throughout the environmental assessment and initial licensing process there was extensive engagement with Indigenous communities. Since the project

deferral in 2013 OPG has continued to keep the communities informed of any relevant project information. When project planning resumed in 2020, we increased our engagement again through more regular means with the communities and put together a capacity agreement to provide funding to support their participation in the project. To date, two of the communities have signed onto the capacity agreement, and we are hoping that more will also join.

Given the restrictions of COVID-19 over the last year, our recent interactions have been limited to virtual meetings with the community representatives. In some ways this makes it easier to get together since geography is not an issue, but it also makes if more difficult for site visits and relationship-building.

In our meetings, OPG has shared the early information related to site planning and the potential for new nuclear on the site. We recognize, though, that just providing information is not enough and that for meaningful engagement we have to understand the perspective of the communities that they share with us and listen to their feedback on our plans. Particularly in the area of health of the environment their feedback has been very insightful and we plan to continue the dialogue and implement as much as we can.

Additionally, we understand that meeting

regulatory requirements isn't enough. When it comes to the environment our goal should be to do no harm.

We have also clearly heard the concerns expressed about nuclear waste and spent fuel, and we are committed to continue to safely manage waste while working on reduction strategies and working with the nuclear industry to develop lasting solutions for permanent disposal.

As we build our plans and designs further, we will continue to engage with the communities in those areas that they want to be involved. We will welcome their presence at site, their participation in the environmental monitoring program, and we will respectfully request that they share their Indigenous knowledge with us.

With respect to employment the Indigenous Opportunities Network, or ION, as it is commonly known, was initiated as part of the Darlington Refurbishment Project in 2018. This specific initiative to seek out and hire Indigenous people has resulted in direct employment of over 50 people within OPG and our vendor partners. In the past, the opportunity has been mainly in the building trades but recently we have extended it to engineering and project jobs, as well. We have started to engage through ION to hire staff for these early stages in the new nuclear project, and we expect to generate many more opportunities

going forward.

It is important for us to acknowledge the interventions that have been submitted by Curve Lake First Nation and the Mohawks of the Bay of Quinte. We take their messages very seriously. Our relationship with these communities is important to us, and we are committed to listen and to learn.

Next slide, please.

On this slide you can see the activities that are permitted under the existing Site Preparation Licence. These are the same activities that we are requesting under a renewed licence. You can see that these are all routine construction activities, such as grading land and building roads.

As stated earlier, there is nothing nuclear here. We aren't permitted to build the reactor or even do the reactor building excavation or pour nuclear concrete. These activities simply lay the groundwork for a new plant.

Next slide, please. I'm now going to provide an overview of the CNSC Safety and Control Areas as they pertain to OPG's programs and nuclear management system. On this slide are listed those Safety and Control Areas that are applicable to the site preparation licence.

The Management System Safety and Control

Area measures how processes and programs are implemented to ensure a licensee achieves safety objectives, continuously monitors performance against those objectives, and fosters a healthy safety culture.

Our original licence application included a Darlington New Nuclear Project specific management system that was developed in accordance with the applicable standards at that time. However, with the deferral of the project in 2013, further work on that project-specific management system was also deferred.

OPG has since maintained the Darlington New Nuclear site and associated activities by making use of the same nuclear management system as for our operating plants. We have decided to continue using this OPG nuclear management system for the site preparation phase.

OPG has done an assessment of the nuclear management system to ensure that it covers all aspects applicable to the site preparation licence. The OPG Management System also undergoes periodic assessments to ensure it remains compliant with up-to date regulations, codes, standards and practices.

The original licence application provided the risks and mitigation measures for those licensed site preparation activities which characterize the risks to health, safety and the environment that may be encountered

by workers and the public. The licensed activities encompassed by this licence renewal application are the same as those in the original application.

The likely effects and mitigation measures were described in the original application, and those mitigation measures when implemented, were considered adequate to ensure no significant residual adverse environmental effects would result from the site preparation activities. These mitigation measures took the form of a variety of commitments which are now documented in the Darlington New Nuclear Project Commitments Report.

As Robin Manley outlined earlier, OPG has undertaken a review of licence basis of materials and baseline conditions associated with the Darlington new nuclear site. In general, no new risks to health, safety or the environment have been identified which would require new mitigation measures to be undertaken. The reviews have identified the need for some minor adjustments to some existing mitigating measures, particularly in the area of environmental protection and these are discussed in detail in our application.

In addition, a review was performed to determine the level of compliance of programs, procedures, and plans that will control future site preparation activities in the Operating Performance Safety and Control

Area. The program was reviewed against the requirements of CSA Standard N286-12 Management system requirements for nuclear facilities, and REGDOC-3.1.1 Reporting Requirements for Nuclear Power Plants and was found to be compliant with the requirements of these documents.

The Physical Design safety control area covers safety-important civil work and the layout of areas, structures and systems. The civil structures and works permitted under the licence includes activities like, clearing of
land and building roads and office buildings.

Prior to the start of site preparation activities, design measures will be taken to ensure that potential effects identified through the environmental assessment process are addressed, for example, should any lake infilling be required.

A more detailed layout of areas, structures and site preparation requirements will be defined once the reactor technology has been selected and prior to the start of site preparation activities.

Safety analysis 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 impact of such hazards.

The original licence application included the hazard assessments catering to natural external hazards such as seismic, meteorological, and biological; and human-induced hazards such as transport accidents, fires, and explosions; and their impact on the site suitability for Darlington New Nuclear.

A comprehensive safety analysis and hazard screening of the Darlington Nuclear Generating Station in 2019, the results of which are applicable to the Darlington New Nuclear site by proximity, concluded there is no undue risk to personnel, public or the environment.

OPG also has committed to future work in this area including a site geotechnical and seismic hazard investigation program, and submission of a preliminary safety analysis as part of the Licence to Construct.

OPG's Health and Safety Management System applies to all OPG personnel and contractor staff supporting the project. A site-specific Occupational Health and Safety Plan will address work-related hazards.

OPG has a demonstrated excellent conventional safety record, as exhibited at our Darlington Refurbishment project and our operating plants. This same safety culture will be extended to the Darlington New Nuclear Project.

Next slide, please. Workers performing

site preparation activities under the renewed licence will not be at risk of receiving radiation doses exceeding public dose limits, including exposure from the proximity of the Darlington Waste Management Facility and Darlington Nuclear Generating Station.

As part of the Occupational Health and Safety Plan, we will verify that expected doses remain well below public dose limits, prior to the start of site preparation activities.

Next slide, please. The Environmental Protection area covers programs that identify, control and monitor all releases of radioactive and hazardous substances and effects on the environment from facilities, or as the result of licensed activities.

The original licence application referred to OPG's Environmental Protection Program to address the requirements for site preparation activities as well as the environmental monitoring and environmental assessment follow up plan. More work has been undertaken in this area than any other since the original licence was granted.

Extensive details are provided in our submissions on topics such as soil characterization, bank swallow monitoring, aquatic environment studies, fish habitat compensation, the Round Whitefish Action Plan, and many others.

OPG's Environment Program complies with all the applicable standards and remains adequate to cover the site preparation licensed activities. As Mark Knutson noted earlier, OPG has a demonstrated track record of environmental stewardship which will continue for Darlington New Nuclear site preparation licensed activities.

OPG will ensure that impacts of the project on the environment will be low risk and adequately mitigated. As discussed earlier, we will also involve intrusted Indigenous community representatives in the Environmental monitoring and other areas where they can help us protect the environment.

OPG has robust emergency preparedness plans integrated with the Province of Ontario, Region of Durham, Municipality of Clarington, federal agencies and international partners. Policies, programs and procedures are in place for fire and emergency response and will cover licensed activities under this site preparation phase.

Next slide, please. OPG has a mature security program in place at the Darlington Nuclear site that will cover the work being performed under this licence. Site preparation activities will be occurring within the Darlington controlled area, which is subject to

regular controlled area Nuclear Security Officer patrols. Responses to any security incidents on the site will be consistent with the current response within the controlled area.

Security clearances and handling of any prescribed information that is required during the site preparation phase, will occur using the same standards as our existing nuclear facilities.

Any hazardous substances or hazardous waste generated as a result of site preparation activities will be limited to those utilized during standard construction processes. Any hazardous waste will be managed according to site specific environmental plans, including disposal at a licenced facility.

The site preparation licence does not cover details related to management of nuclear waste and spent fuel, because we do not generate either of those in site preparation activities. However, OPG remains committed to developing lasting solutions for wasting materials.

Used fuel is safely and securely stored at each nuclear site, for eventual relocation to a permanent disposal facility. This same process will be followed for the Darlington New Nuclear Project.

The Nuclear Waste Management Organization

has responsibility for long-term management for all of Canada's used fuel. The NWMO's plan is to have a Deep Geologic Repository in service in the 2040s for Canada's used fuel. This would include provisions for fuel waste generated at the Darlington New Nuclear Facility.

Next slide, please. A Preliminary Decommissioning Plan was prepared as part of the environmental assessment process. Since none of the site preparation activities would require decommissioning if the project is cancelled, no financial guarantee is planned at this stage. Once a technology is selected, the preliminary decommissioning plan will be revised and a financial guarantee in place prior to the start of nuclear construction activities.

Next slide, please. The final area is Safeguards and Non-proliferation. There have been no changes in this licence application with respect to Safeguards and Non-Proliferation. During site preparation activities, there will be no nuclear substances or controlled nuclear components on site.

OPG will engage with CNSC Staff once the reactor technology has been selected to support development of a preliminary Design Information Questionnaire, which will be required to meet International Atomic Energy Agency Obligations.

Next slide, please. I am now going to provide a brief update related to the commitments OPG made during the Environmental Assessment and as a result of the original site licensing.

A few general points to note; while no licensed activities have commenced, OPG has continued to advance various long lead commitments that are required for site preparation. These activities are primarily for environmental protection and site characterization. OPG submits an annual report detailing its site activities and progress on the commitments. The last report was submitted in March of this year.

On this slide you can see that closure requests have been submitted to CNSC Staff on OPG's management system for site preparation, as well as the emergency preparedness plan and the training procedure. The other commitments are on track to be completed and submitted to the CNSC in accordance with the *Licence Conditions Handbook* well prior to OPG commencing site preparation activities.

On this slide you can see that the Archaeological Excavation Reports have been accepted by CNSC as closed. The other items were on track.

In summary, as detailed in the Darlington New Nuclear Commitments Report submitted to CNSC staff, OPG

will continue to progress long lead commitments and commitments that need to be completed before the start of site preparation activities.

At this point I will turn the presentation back to Mark Knutson for concluding remarks.

Next slide, please.

MR. KNUTSON: Mark Knutson, for the record.

In conclusion, Commissioners, in OPG's licence application and supporting documentation, and through our CMD and today's presentation, I believe we have demonstrated that the Darlington New Nuclear Project site remains suitable for new nuclear generation. OPG's site preparation licensed activities could not pose any unreasonable risk to the public, personnel, or the environment. And OPG is a qualified to carry on the licensed activities, and meet all regulatory requirements.

The licence continues to be a significant asset for OPG and the Province of Ontario. It is important for the future of energy in Ontario, and in Canada as a whole, for reducing Greenhouse Gas emissions, for the future of nuclear power in Canada.

The Darlington New Nuclear licence enables us to take action on Canada's goals to reduce climate

change impacts by being springboard for future nuclear projects in other jurisdictions.

I respectfully request the Commission's consideration for a 10-year licence renewal for our Darlington New Nuclear Project site.

Thank you, and I look forward to your questions.

Next slide, please.

THE PRESIDENT: Okay. Thank you, OPG team for your presentation. We will now move to a presentation from CNSC Staff as outlined in CNDs 21-H4 and 21-H4.A. Dr. Ducros, you may proceed.

DR. DUCROS: Thank you. Can you see the presentation?

THE PRESIDENT: Not yet.

DR. DUCROS: Shall I proceed without the first slide?

THE PRESIDENT: Go ahead, yes.

CMD 21-H4/21-H4.A

Oral presentation by CNSC Staff

DR. DUCROS: Okay. Good morning, President Velshi and Members of the Commission.

I am Dr. Caroline Ducros. I am the

Director General of the Directorate of Regulatory Improvement and Major Projects Management.

With me today are Ms. Sarah Eaton, Director of the New Major Facilities and Licencing Division; and Mrs. Laura Andrews, the Lead Project Officer for the Darlington New Nuclear Project. We are also joined by other CNSC colleagues, and federal, provincial and municipal agencies who are available to answer questions the Commissions may have.

Our presentation today will discuss Ontario Power Generation's application to renew the Darlington New Nuclear Project licence to prepare site. OPG is requesting continued authorization to carry out site evaluation and preparation activities for a period of 10 years ending June 2031.

Our presentation, identified as CMD 21-H4.A, provides a summary and highlights from CNSC Staff's written submissions, found in CMD 21-H4.

Next slide, please. This presentation will cover an overview of the project location and history, a review of OPG's renewal licence application, CNSC Staff's assessment of OPG's performance, other matters of regulatory interest, the proposed licence, and CNSC Staff's conclusions and recommendations to the Commission on OPG's licence renewal application.

The purpose of this public hearing is to review, discuss and provide information on OPG's application to review -- to renew its CNSC licence for the Darlington New Nuclear Project, DNNP.

OPG is requesting that the Commission renew its Power Reactor licence to prepare site for the DNNP, valid for 10 years from the date of issuance. CNSC staff recommend the Commission take the following actions. Renew the Power Reactor Site Preparation Licence to authorize OPG to conduct site preparation activities at the Darlington New Nuclear Project for a period of 10 years and authorize the delegation of authority as set out in this CMD 21-H4.

I will now pass the presentation over to Ms. Eaton.

MS. EATON: Good morning. My name is Sarah Eaton, and I am the Director of the New Major Facilities Licencing Division.

The next few slides will provide an overview of the location and history of the Darlington New Nuclear Project.

The image on the left shows an aerial view of the Darlington site. The white text shows the location of the Darlington Nuclear Generating Station, while the orange boundary marks the location of the Darlington New

Nuclear Project Site.

On the map on the right, the Darlington New Nuclear site is shown by an orange star and is located in the Municipality of Clarington, Ontario. The site is seven kilometres southwest of Bowmanville and approximately 65 kilometres east of Toronto.

The Darlington New Nuclear Project proposes up to four nuclear reactors --

THE PRESIDENT: Have we lost Ms. Eaton?

DR. DUCROS: I have, so I can carry on.

THE PRESIDENT: Please.

DR. DUCROS: The Darlington New Nuclear Project proposes up to four nuclear reactors with a capacity to generate 4,800 megawatts of electricity.

The *Nuclear Safety and Control Act,* NSCA, and associated regulations require licence applications to be filed for the following activities: site preparation, construction, operation, decommissioning, or abandonment. OPG has requested a licence renewal for the site preparation stage.

This slide outlines the history of the project. In 2006, OPG applied for a licence to prepare a site and began the Environmental Assessment under a Joint Review Panel, or a JRP, under the *Canadian Environmental Assessment Act (1992)*.

The JRP for the Darlington New Nuclear Project was an independent body, mandated by the Minister of the Environment and the President of the CNSC to assess the environmental effects of the proposed project and review the application for a licence to prepare site. The Joint Review Panel consisted of three members, two appointed by the President of the CNSC, and one appointed by the Minister of the Environment.

The JRP process included significant public and Indigenous engagement. There were two technical information sessions in 2009 and 2010, three open houses in the project area in 2010, and 17 days of public hearings in March and April of 2011. Two hundred and seventy-eight (278) submissions were received from all levels of government, Indigenous groups, civil society organizations, businesses, and the public.

In 2012, following the Government of Canada decision on the Environmental Assessment, the Joint Review Panel issued OPG a Licence to Prepare Site, valid for 10 years. Further information on the EA decision is provided in the next slide.

In 2020, OPG submitted an application to renew its licence to prepare site resulting in today's hearing.

The Joint Review Panel, established under

the *Canadian Environmental Assessment Act* of 1992 concluded:

> "The proposed project is not likely to cause significant adverse environmental affects, taking into account the JRP recommendations and implementation of proposed mitigation measures."

Included with the Joint Review Panel's determination, were commitments directed to OPG, federal authorities, the government of Ontario and the Municipality of Clarington. All commitments were accepted by OPG, or the responsible agency. CNSC Staff verified through compliance activities that the environment and health of persons are protected.

As mentioned previously, the JPR issued commitments. The OPG Commitment Report consolidates OPG's commitments resulting from multiple sources including commitments made during the JRP process; commitments to OPG from other regulatory bodies, including those outlined in the Government of Canada's response to the JRP commitments; documents submitted in support of licence renewal; and applications made to other regulatory bodies.

Some commitments extend throughout the

lifecycle of the facility, while others are specific to licensing stages or key decision points. The OPG commitments report is a licensing basis document, referenced in the *Licence Condition Handbook.* This means that CNSC Staff must be notified before any changes are made. CNSC Staff then assess the proposed changes to ensure they remain within the licensing basis of the project.

Since the original licence was issued in 2012, CNSC staff reviewed and verified that three OPG commitments have been completed. These include, the submission of updated site survey drawings, for future construction and operation; archeological excavation reports which concluded that the excavation work was appropriate; and the reports were accepted by the Ontario Ministry of Tourism, Culture and Sport.

CNSC staff, Fisheries and Oceans Canada and Environment and Climate Change Canada assessed OPG's cost benefit submission regarding once-through cooling versus cooling towers. All three conditionally concluded that once-through cooling is acceptable as the preferred condenser cooling method.

I will now pass the presentation to Mrs. Laura Andrews, the Lead Project Officer for the Darlington New Nuclear Project.

MS. ANDREWS: Good morning, Commission Members. I will now provide an overview of OPG's current application, followed by CNSC staff's assessment of OPG performance throughout the current licence period.

OPG submitted its licence renewal application June 29th, 2020 requesting a 10-year licence term. CNSC staff's assessment concluded that OPG's licence application satisfied the requirements of the *Nuclear Safety Control Act* and associated regulations.

During the current licence period CNSC staff reviewed and verified OPG's submissions in response to recommendations and regulatory requirements. CNSC concluded OPG's performance during the licence term was satisfactory.

CNSC staff's review of OPG's 2020 application included an assessment to ensure OPG's renewal application remains within the bounds of the approved Environmental Assessment. CNSC staff concluded that the approved Environmental Assessment remains valid and OPG's application meets licensing requirements.

The current licence authorizes OPG's activities for site access control, earthworks, construction of support facilities and utilities and construction of monitoring, mitigation, flow protection and erosion control measures. These activities are the same as

those in the proposed licence. To date, OPG has not initiated any authorized site preparation activities.

This section of the presentation will discuss CNSC staff assessment of OPG's licence application to renew their Power Reactor Site Licence (PRSL) 18.00/2022.

The CNSC has a robust regulatory framework with regulatory oversight 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. A CNSC licence is often associated with a *Licence Condition Handbook* that includes compliance verification criteria to ensure licence conditions continue to be met throughout the term of the licence.

A CNSC licence establishes licensee-specific authorized activities and conditions that must be met during the term of the licence.

Requirements and guidance to meet licence conditions are provided through CNSC regulatory documents and CSA Group national and international codes and standards.

The CNSC published Regulatory Document 1.1.1 entitled *Site Evaluation and Site Preparation for New Nuclear Facilities* in July 2018.

CNSC staff completed a review of OPG's

licence application against REGDOC-1.1.1, which is separated into two key parts.

The first includes site evaluation, which evaluates the suitability of the site for the nuclear facility over the lifespan of the facility. Site evaluation activities are similar to activities done during an Environmental Assessment to characterize the environmental baseline of a site.

The second includes site preparation evaluation, which outlines measures to ensure the protection of human health, safety, security and security of the environment during the implementation of site preparation activities, as authorized in the licence.

CNSC staff evaluated and reported on the 11 applicable safety and control areas, or SCAs, in CMD 21-H4. CNSC staff have focused on management systems, operating performance, safety analysis, physical design and environmental protection for this presentation as their key safety and control areas for the site preparation stage.

The remaining six low-to-medium significance SCAs are summarized on Slide 24.

SCA ranking methodology is described in Appendix A of CMD 21-H4.

The Management System SCA covers the framework that establishes the processes and programs

required to ensure an organization fosters a healthy safety culture, it achieves its safety objectives and continually monitors its performance against these objectives.

CNSC staff assessed OPG's current management system during the licence term and as part of the licence renewal application and verified it includes programs and processes necessary to carry out site evaluation activities.

OPG has committed to submit and implement additional program components before starting site preparation activities.

CNSC staff have reviewed OPG's plan for submitting these documents and confirm that the plan is acceptable. CNSC staff will continue to monitor implementation of the management system over the proposed licence term and throughout the lifecycle of the project to ensure it continues to meet regulatory requirements.

The Operating Performance SCA includes an overall review of the conduct of licence activities and the activities that enable effective performance. OPG has not progressed to the point of conducting the licensed activities.

CNSC staff assessed OPG's conduct of characterization activities and application and supporting documents and conclude that the proposed safety and control

measures, including relevant commitments for operating performance, remain appropriate.

Prior to commencing any site preparation activities OPG must conduct a comprehensive soils characterization. Under the Operating Performance SCA for a licence to prepare a site CNSC will have oversight of OPG's assessment and management of any contaminated soil or rock encountered during excavations.

OPG must demonstrate appropriate design of flood protection and erosion control and that supporting structures and civil works remain suitable for DNNP.

OPG must notify the CNSC of any changes in site conditions and activities arising from such changes. During the current licence period no notifications were provided to CNSC staff.

In the event of a notification the CNSC would assess to ensure that OPG's activities remain within the bounds of their licence. CNSC staff will continue to review OPG's submissions and activities to ensure compliance with regulatory requirements.

The Safety Analysis SCA focuses on the systematic evaluation of hazards, including potential internal, external, human-made and natural events. OPG includes safety analysis in its Reactor Safety Program.

CNSC staff assessed OPG's Reactor Safety

Program and confirm that the hazard assessments performed for this renewal application meet the requirements and guidance of REGDOC-1.1.1: *Site Evaluation and Site Preparation for New Reactor Facilities*.

CNSC staff assessed OPG's hazard assessments for the impact of these potential hazards on the suitability of the site for DNNP, including natural external hazards such as seismic, meteorological and biological hazards and human-induced hazards such as transport accidents, fires and explosions.

CNSC staff have accepted OPG's revised commitment to include seismic beyond design basis conditions as required by REGDOC-1.1.1 for OPG's Site Geotechnical and Seismic Hazard Investigation Program prior to commencement of site preparation activities.

CNSC staff will continue to verify progress on OPG commitments and safety analysis and ensure they meet regulatory requirements.

The Safety and Control area, or SCA, of Physical Design relates to activities that impact the ability of structures, systems and components to meet and maintain their design basis over time.

CNSC staff reviewed OPG's application, including submissions regarding OPG's review of site characterization data for the DNNP site. CNSC staff

confirm that the reviews did not identify any new or changed information that would alter the proposed exclusion zone, civil structures and civil works or layout of areas, structures and systems identified in the previous application.

OPG must perform an evaluation of site layout opportunities before site preparation begins to ensure that the layout of areas, structures and systems consider impacts to species at risk, such as bank swallows. Site layout evaluations will also consider how to maximize the protection of the environment, such as the identified butternut tree on site, and consider any impacts to OPG commitments, such as the fish habitat compensation plan.

The Environmental Protection SCA covers programs that identify, control and monitor all releases of radioactive and hazardous substances and effects on the environment from facilities or as a result of licensed activities.

During the licence term CNSC REGDOC-2.9.1 entitled *Environmental Protection: Environmental Principles, Assessments and Protection Measures*, was published in September 2020 and several new CSA standards relevant to licence to prepare site environmental protection were published in the N288 series of environmental monitoring and protection programs and

environmental risk assessments at Class 1 Nuclear Facilities.

CNSC staff assessed OPG's corporate Environment, Health and Safety Program and conclude the program meets the requirements of applicable new standards and REGDOCs.

CNSC staff conclude OPG's Environmental Protection Program is appropriate to carry out site activities.

During the licence term federal agencies of CNSC, Environment and Climate Change Canada and Fisheries and Oceans Canada assessed projects, assessed progress on OPG's commitments, including submissions of: bank swallow monitoring results performed to support the future completion of bank swallow mitigation measures and plans and completion of the terrestrial environment baseline characterization; fish community characterization results to support the future completion of condenser cooling water design.

These studies were satisfactory to federal agencies. OPG identified several new species at risk in the project area, which are protected under the federal *Species at Risk Act*, or *SARA*, and the provincial *Endangered Species Act*.

Under these Acts it is prohibited to kill,

harm, harass protected species and damage or destroy their residences or critical habitat without authorization.

CNSC staff confirm that appropriate mitigation measures are in place as documented in OPG DNNP commitments and that commitments are adaptable in order for OPG to address identified changes to the baseline environment.

OPG must demonstrate all authorizations are received prior to commencing site preparation activities, and CNSC staff confirm OPG plans have been developed in consultation with Fisheries and Oceans Canada, Environment and Climate Change Canada, Quinte Conservation and CNSC.

CNSC staff assessed OPG's application and supporting documents and conclude that the proposed Safety and Control Measures remain appropriate for the proposed scope of activities for the SCAs of Radiation Protection, Conventional Health and Safety, Waste Management, Security, Safeguards and Non-Proliferation and Emergency Management and Fire Protection.

CNSC will continue to verify that OPG's activities remain within the bounds of the licence to prepare site.

Prior to commencing with site preparation activities OPG must develop a conventional health and

safety program that will include risks associated with very low levels of radiation from nearby facilities such as the Darlington Waste Management Facility and the Darlington Nuclear Generating Station. The conventional health and safety program will apply to all contractors operating on the DNNP site.

This section of the presentation will discuss CNSC assessment and OPG performance including progress on commitments over the licensing period to date.

CNSC staff use a rating system to describe licensee compliance. Safety and Control Areas, or 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.

The table on the slide provides the rating for each Safety and Control Area at OPG's Darlington New Nuclear Project.

As detailed in Canadian Nuclear Safety Commission Staff's written submission, CMD 21-H4, OPG has maintained a satisfactory rating across all SCAs during the current licence period.

As outlined in REGDOC-1.1.1, the following SCAs are not relevant to a Licence to Prepare Site: human performance management, which is covered under the

Management System SCA for the purposes of a Licence to Prepare Site; fitness for service is excluded due to the lack of structures and systems at the DNNP site; and packaging and transport, as the transport of nuclear substances or devices are not required to carry out site preparation activities.

CNSC staff will provide a report on these excluded SCAs in subsequent licensing stages.

I will now pass the presentation back to Ms. Eaton, if she is available again, for other matters of regulatory interest, or Caroline Ducros.

MS. EATON: Thanks very much, Laura.

For the Darlington New Nuclear Project other matters of regulatory interest include: CNSC's public outreach activities, Indigenous engagement, CNSC's participant funding program, interventions received, decommissioning and financial guarantees.

Public outreach is an important aspect of the CNSC's mandate to disseminate scientific information. The CNSC website is regularly updated with information on the Darlington New Nuclear Project and also includes other informative nuclear safety information.

CNSC staff regularly update the public, Indigenous Groups and the Commission on this project through the Regulatory Oversight Reports for Nuclear

Generating Stations.

For this licence renewal CNSC staff informed the public about the hearing and availability of participant funding through the CNSC's website, email subscription lists, social media channels and letters to Indigenous Groups.

CNSC staff also conducted two webinars to provide information on OPG's application and how to participate in this hearing. Throughout the licence term CNSC staff confirmed that OPG engages key stakeholders as part of its Public Information and Disclosure Program.

As part of staff review of the licence application CNSC staff reviewed and concluded that OPG's Public Information and Disclosure Program complies with the regulatory requirements and expectations outlined in REGDOC-3.2.1: *Public Information and Disclosure*.

CNSC staff continue to plan and implement regular engagement with Indigenous Groups to ensure effective information sharing and the development and maintenance of long-term relationships. Nine First Nation and Métis Groups who have expressed an interest in the proposed licence renewal were identified. Notification letters that outlined how to participate in this hearing and the availability of participant funding were sent to interested Indigenous communities in October 2020.

In February 2021 CNSC staff met virtually with the Métis Nation of Ontario, the Mohawks of the Bay of Quinte, as well as members of the Williams Treaties First Nations, including Curve Lake and Hiawatha First Nations, to discuss the licence renewal application.

CNSC staff are committed to ongoing engagement and collaboration with Indigenous Groups throughout the lifecycle of the Darlington New Nuclear Project in order to build trust and foster relationships.

The CNSC provides participant funding to assist members of the public and Indigenous Groups in providing valuable information directly to the Commission. Based on the recommendations from the Funding Review Committee, independent from CNSC staff and Commission Members, the CNSC approved and awarded funding in the amount of $81,452 to the seven groups listed on this slide.

The CNSC requires a preliminary decommissioning plan to ensure that decommissioning is planned before any nuclear facilities are constructed and then throughout the lifecycle of the site.

Under the *Nuclear Safety and Control Act* OPG is also required to provide a financial guarantee in a form that is acceptable to the Commission. A financial guarantee ensures sufficient funds are available to decommission the licence site or nuclear facility should

the licensee be unable or unwilling to do so. The preliminary decommissioning plan informs the dollar value for the financial guarantee.

As mentioned in earlier slides, OPG has not started any site preparation activities. As there are no activities taking place on the site, CNSC staff re-emphasize the JRP commitments requiring OPG to provide a preliminary decommissioning plan and a financial guarantee which is acceptable to the Commission prior to conducting site preparation activities.

As part of the reviews associated with this licence renewal application CNSC staff evaluated and re-confirmed OPG's commitment to provide these submissions. Once OPG provides these CNSC staff will review the documents against applicable requirements and then make a recommendation to the Commission for decision regarding the suitability of the financial guarantee.

CNSC staff will ensure OPG's proposed financial guarantee is in place prior to the initiation of site preparation activities.

I will now pass the presentation back to Dr. Ducros.

DR. DUCROS: There were 55 interventions received on OPG's licence renewal application. The main themes of these interventions included the following

topics: OPG's future plans, including reactor technology selection and the use of cooling towers; suitability of the site, including species at risk and species important to Indigenous Groups; the validity of the conclusions regarding the EA and Joint Review Panel process; the need to include Indigenous knowledge; and support for the licence renewal.

I will now present information on CNSC staff's proposed licence for the licence term as well as staff's overall conclusions and recommendations.

OPG has requested a 10-year licence term. CNSC staff are proposing a 10-year licence term. The proposed licence includes site-specific licence Conditions 15.1 and 15.2, in addition to standard licence conditions and a draft *Licence Condition Handbook*.

Licence Conditions 15.1 and 15.2 require OPG to implement commitments made during the Darlington Joint Review Panel process and implement an Environmental Assessment follow-up program respectively.

CNSC staff have also proposed modified radiation and environmental protection licence conditions to remove action levels as these are not required during the site preparation stage.

Throughout the licence term CNSC staff will evaluate licensee performance across all applicable

SCAs, conduct inspections according to CNSC's Compliance Verification Program, review and assess compliance reports, licensee programs and facility changes, verify and monitor licensee's implementation of CNSC's regulatory documents in accordance with implementation plans.

CNSC staff will provide regular updates to the Commission on DNNP activities through the Regulatory Oversight Report for Nuclear Power Generating Sites.

I will now outline CNSC staff's conclusions and recommendations for Ontario Power Generation's application for a Power Reactor Site Preparation Licence.

CNSC staff conclude, based on the technical assessment of OPG's renewal application, that OPG is qualified to carry on the activities requested in this licence renewal. The requested activities are within the licensing basis and bounds of the Environmental Assessment and that OPG's site preparation activities would remain protective of the health and safety of persons and the environment.

CNSC staff note that OPG is required under Licence Condition 15.1 to fulfil a number of JRP commitments throughout this proposed licence term, including the requirement to submit a preliminary decommissioning plan and financial guarantee to the

Commission for approval prior to commencing site preparation activities.

CNSC staff commit to provide regular updates to the public and the Commission on the status of these commitments throughout the proposed licence term.

In closing, CNSC staff recommend that the Commission renew the Power Reactor Site Preparation Licence to authorize OPG to conduct site preparation activities valid for 10 years from the date of issuance and delegate authority as set out in CMD 21-H4.

Thank you. We are available to respond to any questions you may have.

THE PRESIDENT: Thank you very much, CNSC staff, for your presentation.

We will now take a break before presentations by Intervenors.

I would like us all to come back for 11 o'clock. Thank you.

--- Upon recessing at 10:38 a.m. /
Suspension à 10 h 38
--- Upon resuming at 11:00 a.m. /
Reprise à 11 h 00

THE PRESIDENT: Welcome back everyone.

Marc, over to you for a few introductory remarks please.

MR. LEBLANC: Merci, Madame la Présidente. 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 a maximum of ten minutes for each oral presentation and we would appreciate your assistance in helping us to maintain that schedule.

Your more detailed written submission has already been read by the Members and will be duly considered. There will be time for questions from the Commission after each presentation, and there is no time limit ascribed for the question period.

I will ask that once your presentation is over and the associated question period, that you leave the Zoom session. You will be able to continue following the hearing via the live webcast on the CNSC website.

I would like to apologize to those who were on webcast where there were some issues for some of you with the slide deck. That has been fixed during the break time, so hopefully all goes well. Thank you for your patience.

Madame la Presidente.

THE PRESIDENT: Thank you. The first

submission is from the Mohawks of the Bay of Quinte, as outlined in CMD 21-H4.61.

I understand Ms. Nicole Storms will offer an opening address before the presentation.

Ms. Storms, the floor is yours.

CMD 21-H4.61

Oral presentation by the Mohawks of the Bay of Quinte

MS. STORMS: Good morning. Can you hear me?

THE PRESIDENT: Yes, we can.

MS. STORMS: Okay. Yes, I'd like to start with the (spoken in Kanienkeha:ka, Mohawk language)

I will say it in our language and give you a summary of what had been said following that.

(Spoken in Kanienkeha:ka, Mohawk language).

My opening was the (spoken in Kanienkeha:ka, Mohawk language), in other words, in English terms, the words before all else.

So these are words that we say at the beginning of every ceremony, every gathering, every meeting. And what it is, is we're acknowledging our responsibilities to all living things, to preserve and

protect for the continuation of life on (spoken in Kanienkeha:ka, Mohawk language) our Mother the Earth for generations to come.

I will pass it on to XCG. Thank you.

MR. SHIPLEY: Yes, I'm Kevin Shipley, and I'm with XCG Consulting Ltd.

We have just a little echo here we're going to try to fix.

So we prepared a letter which I believe that everyone would have a copy of, it's dated May 7th, 2021 and it provides our comments on the proposed licence to prepare a site for the Darlington New Nuclear Project.

So I'm just going to highlight certain points in the letter, and I will try to keep within my 10 minutes.

So just to start off, the Mohawks of the Bay of Quinte Community is called the Tyendinaga Mohawk Territory and it's approximatly 140 kilometres east of the Darlington New Nuclear Project site.

Protection of the natural environment is a very high priority for the Mohawks of the Bay of Quinte, and so it's of critical importance to MBQ that the environmental management of the future site preparation activities, as well as the future operations, are done in a manner that minimizes risk of environmental impacts to

human health and the natural environment.

Now, in going through the documentation that we were provided with on the project on the licence renewal we came up with a number of points that we wanted to touch on, and those are presented, starting on page 3 of the letter that we prepared, and I'm just going to start with Item 4.1, Loss of Habitat.

So our understanding of reviewing the documents indicates that OPG plans to undertake a number of terrestrial environment mitigation measures and plans, as well as aquatic mitigation measures, and those include: the salvage and relocation of aquatic plants and biota; maintaining access to wildlife travel; minimizing areas to be cleared; and, replanting 40 to 50 hectares of cultural meadow and 15 to 20 hectares of cultural thicket.

Now, in reviewing these documents it was unclear to us who would be responsible for ensuring and overseeing these activities during the work. The Joint Review Panel recommended that OPG undertake a thorough evaluation of the site layout before doing these activities. MBQ would be interested in reviewing the findings of that evaluation, if that could be provided once it's ready. And also potentially interested in an opportunity to assist in the planning stages.

It's unclear who would be conducting the

transfer of plants and if there would be an opportunity for MBQ or other Indigenous groups to be involved in the process.

So moving on to the next point, Lake Infilling. There's a substantial amount of lakeshore area where there's going to be infilling involved, depending on the nature of the future nuclear site that's to be established there, the technology that's selected. But there is potential for quite a lot of lake infilling.

And MBQ feels strongly that no lake infilling should occur unless there is certainty that the Darlington New Nuclear Project is going to proceed.

Any plans for lake infilling that are developed should be reviewed by the Department of Fisheries and Oceans, as OPG has stated will happen. The MBQ is very concerned about the potential for lake infilling and its possibility to negatively impact water quality, aquatic plants, fish, and other aquatic biota and natural habitat areas.

Therefore, it's critical to MBQ that OPG follow through with the commitments to ensure lake infilling occurs in accordance with DFO approvals and requirements.

So the next point is Fish Habitat Compensation. In conjunction with the lake infilling, OPG

will need to obtain DFO approval for development of a fish compensation plan. And it's our understanding that they'll be obtaining approval for this from DFO, Ministry of Natural Resources and Forestry, and Central Lake Ontario Conservation Authority.

Now, because the TMT is downstream of this project site in Lake Ontario, and many Tyendinaga Mohawk Territory community members actively fish in the Bay of Quinte, and the livelihood and well-being of the MBQ Band members depends on quality of the fish and other fresh-water aquatic life in the lake, it is imperative from MBQ's perspective that OPG follow through with its commitments to ensure fish habitat is maintained and/or reinstated at the DNNP or suitable offset locations.

Now, the fourth item is Bank Swallows and Related Species. Mitigation measures are being considered for species at risk such as bank swallows and other related species that could be disturbed by the project.

Now, it's our understanding from reviewing the information that, depending on the technology selected, there may be no disturbance at all to the existing natural bluff. However, it's possible that a portion of the bluff may need to be removed or there may need to be complete bluff removal.

Therefore, especially in the instance of

complete bluff removal, mitigative plans will need to be developed in consultation with CNSC, Environment Canada, Ministry of Natural Resources and Forestry and the Central Lake Ontario Conservation Authority.

Now, from MBQ's perspective, we believe the bluff should only be removed if it is determined to be absolutely necessary. It would be preferable not to have to disturb it at all.

And the loss of any natural habitat and disturbance of species at risk is of great concern to the MBQ, and MBQ supports preferred mitigation measures that includes the development of a site that minimizes the destruction of the natural bluff and associated nesting habitat.

Now, the next point is Environmental Practices During Construction, that's the fifth one.

The OPG commitments report outlines that erosion, sediment, dust, and surface water control plans will be developed in consultation with regulatory agencies and good industry management practices.

MBQ believes that CNSC oversight is required to ensure that the control plans are followed and that no releases occur to Lake Ontario that could be detrimental to fish or fish habitat. And this is important, because TMT is downstream of the project.

It's very important, from MBQ's perspective, that OPG follow through with its efforts to limit releases and that these mitigation measures be implemented not only for round whitefish population, but other fish species and invertebrate populations in the lake.

Number 6, Environmental Spills. Prior to site development, OPG is committed to having spill prevention and contingency plans in place we understand from reviewing the documentation.

Notification is a concern here. MBQ would like to receive immediate notification in the event of any environmental spills that have the potential to impact Lake Ontario, directly or indirectly, and subsequently negatively impact Tyendinaga Mohawk Territory lands, waters, or residents.

And we want to make sure that these plans are implemented in such a way that they're based on industry best management practices.

The last point, number 7, Seismic Events and Extreme Weather. There have been earthquakes in Ontario that have measured in excess of 5 on the Richter scale, there have been tornadoes measuring EF2 level, which is indicative of considerable destructive power.

Therefore there is a potential for natural

disasters and extreme weather events to occur in the vicinity of the Darlington New Nuclear Project, and therefore it's important to use the highest design standards to withstand earthquakes and tornadoes and any other natural disasters that have the potential to occur.

That concludes the main points of summary of our letter. Thank you for listening.

THE PRESIDENT: Thank you, Mr. Shipley, for the submission. And thank you, Ms. Storms, for your opening address. Much appreciated.

We'll open the floor up for questions, and we'll start with Dr. Berube.

MEMBER BERUBE: Yes, good morning, and welcome to the hearing, I haven't had a chance to say hello at this point.

I want to thank Mohawks of the Bay of Quinte for their submission, it's well-done. It seems to cover all the points that I believe need to be addressed here.

Let's start off with probably the most critical point, which is the envelope for this document, the loss of habitat.

I've looked at the submissions by OPG and also CNSC. But what I'd like OPG to start with is sort of a summary of how you're dealing with loss of habitat

events, how you're going to include, you know, the Indigenous members and communities and figuring out where you need to put things or how you're going to actually replace them.

Also, I want to look at the potential species that are at risk here just to give us an overview, and the public an overview, of what we're looking at in terms of magnitude.

Then I'd like to hear from CNSC in terms of what oversight measures and activities that will be in place as these activities are happening on this site over the 10-year licensing period. Thanks.

MR. MANLEY: It's Robin Manley, for the record. I'm the Vice-President, New Nuclear Development at Ontario Power Generation.

Commissioner, I believe you asked us to talk about our overall plans to protect against loss of habitat and protection of the environment, incorporation of Indigenous knowledge, and the potential magnitude of impacts. Have I summarized it rightly?

Thank you very much.

So I'm going to call on a couple of members of our team to assist me in the details of that, Carole Gregoris and Raphael McCalla.

But just as an overview, let me start by

saying that OPG appreciates the intervention from the Mohawks of the Bay of Quinte and the insights that you provided in writing, and then again today.

Ontario Power Generation meets with the Mohawks of the Bay of Quinte periodically to provide information and to hear their perspective on matters such as our nuclear operations and other activities that OPG undertakes.

And we recognize the high priority that the Mohawks of the Bay of Quinte place on protection of the environment, protection of habitat, minimizing any potential impacts on the lake and the fish and other species, and generally minimizing risk.

OPG also places high priority on those very same things in our regular operations, and we will continue to do so for our Darlington New Nuclear site.

I'm going to ask Carol Gregoris to speak first to how we are working with Indigenous communities to incorporate Indigenous knowledge into the plans for this project. Carol, can I turn it over to you?

MS. GREGORIS: Thank you, Robin. Carol Gregoris, for the record. So, first of all, I just want to talk a little bit about the planning and how we're preventing loss of habitat or managing loss of habitat.

So our goal in planning this project is

really to minimize our impact on the environment. So that's minimizing our spread, our construction areas and our design areas in the construction process, and also how we're designing our facility.

So we're still very early in the planning process. We have met with the Mohawks of the Bay of Quinte and other Indigenous communities and shared very very early concepts of, you know, where we think the site that we would be looking at would be located. And we have received their feedback that they want to be involved in planning the site.

So it definitely is our plans to continue meeting with the Mohawks of the Bay of Quinte and other Indigenous communities to get their input on how we're planning the site and how we're planning the project so that we do minimize the effect on the environment.

Specifically with respect to sensitive areas, and Raphael can talk more about this, but we do identify where the sensitive areas are and that's another topic that we do need to talk to the Indigenous communities about, what areas we feel are sensitive areas, and there may be some other areas that they would identify as well.

So those talks are just beginning and we hope to have a lot of communication going forward.

I will turn it over to Raphael McCalla to

talk a little bit more about the impact to the environment.

MR. McCALLA: Raphael McCalla, Director of Environment Operations Support for Ontario Power Generation, for the record.

I'd like to start by first perhaps addressing the question with respect to species at risk on the site.

So since the EA was approved, the additional work that we've done at the site, as well as changes to our regulation, is identified species that are either threatened or are endangered. And I'll give you an example in the case of the bank swallows.

Bank swallows are now identified as a threatened species and, as such, we are conducting various studies to understand the extent of the colony that exist at the Darlington site. We do annual counts. We have been doing testing of artificial structures to look for ways to address any compensation that may be necessary in the event that a portion of the bluff, is necessary that we take it down, so to speak, in order to construct this site. So that's one example of what we're looking at.

We also have done a number of studies out no the lake to understand the aquatic makeup in the case of any infilling that may be required.

So we continue to do this type of work, we

continue to work with the various regulators to inform them of the activities, we produce reports, we send that to the CNSC as well as to other regulators to ensure that they are kept abreast of what we're doing.

And as the project develops and we better understand the potential impacts, we will work with the appropriate regulators to ensure that we receive the appropriate approvals necessary to proceed with the project.

THE PRESIDENT: Thank you, OPG. Can we move to CNSC then?

DR. DUCROS: Caroline Ducros, for the record.

Yeah, so in response to the compliance oversight aspect of the question, the CNSC adopts a risk informed approach to compliance oversight, so what this means is that we do a 10-year plan of compliance verification, and that plan ensures that we hit all the -- the activities and the processes that need to be inspected against. So, the compliance verification is not just inspections, but it also includes the annual reports that we require of licensees. It includes desktop reviews of technical studies. It also includes notification and follow-up actions.

In that 10-year plan, we may have a

certain number of inspections, but if for any reason we feel that we have to add any focused inspections to that we will. And, so we -- we conduct those inspections also in relation with the *Licence Condition Handbook*, which has compliance verification criteria.

With respect to the submission from the Mohawks of the Bay of Quinte, in terms of the environmental follow-up and need to make sure that the activities are conducted in accordance with regulations, it is the OPG's responsibility to make sure that any construction activities or any site preparation activities are carried out in accordance with the Regulations and with our expectations. It is CNSC's responsibility to conduct compliance oversight for that.

So, for the specific types of activities that we undertake for environmental monitoring and making sure that everything is onboard, I would like to pass it to the Environmental Protection staff at the CNSC who can give more specific examples.

DR. DAGHER: Thank you, Dr. Ducros.

Dr. Elias Dagher, for the record. I am currently the Acting Director of the Environmental Risk Assessment Division.

So, in line with Dr. Ducros' comments as part of CNSC staff's compliance assurance program we are

always continuing to review the information provided to us, so ensuring those mitigation requirements are being taken, conducting technical assessments to assess even before they have been implemented, to continue to be apprised of those plans and developments of the work. We conduct those technical assessments on those proposed plans and work with our federal family, including Environment and Climate Change Canada, as well as DFO to ensure their involvement in those technical assessments.

As mentioned by Dr. Ducros, through inspections and site visits we help to identify that those mitigation measures are in place. And in terms of routine monitoring results, assessing them to make sure that they are in line with the Environmental Protection Program requirements and requirements in the Licence.

Thank you.

THE PRESIDENT: Dr. Berube, did you have any follow-up question to that?

MEMBER BERUBE: Just one more question for CNSC.

Thank you for your response, by the way.

So, with regard to inspections, especially during construction activities do you actually have an inspector on-site full time during those activities or is that a periodic and frequent type of visit to see how

things are going, or to see how things are progressing?

Could you give me some understanding what that looks like if -- just -- this, of course, is not a nuclear build but it is build on a site, on a nuclear site, proposed site, and what -- what kind of direct monitoring do you do under those conditions?

DR. DUCROS: Caroline Ducros, for the record.

We don't have someone on-site that continually observes the whole process, but we do have a site office and we would make sure that there was a periodic walkdown to ensure that things are being carried out as they should be.

Any deviations, as well -- when I point out any deviations from what we expect or regulatory action to the licensed activities, the licensee has to report to us. So, that would come back to us. If there was any deviations that go beyond the scope of the Licence, then we would be reporting those to the Commission through an Event Initial Report. So, in relation to the comment about spills and things like that, if there were any hazardous spills that would require a Commission-type decision through our Event Initial Report structure, we would come to the Commission for that.

MEMBER BERUBE: Thank you. I don't have

any more questions.

THE PRESIDENT: Mr. Jammal.

MR. JAMMAL: Thank you, Madam Velshi. I would like to compliment Dr. Ducros' answer.

Dr. Berube, we will have, as the construction starts, based on the approval of the licensed activity and its hypothetical, let's say construction, we will have a baseline inspection program that our site office at Darlington will support that activity. So, we'll put the inspection plans in place and we'll do it at two levels: proactive, and reactive.

Proactively, so we will go out on site based on arranged inspections.

And reactive, based on any information we have.

So, as part of what we did for refurbishment or new projects, we do have the experience and we will go through first with the planned inspection baseline, and we will proceed as Dr. Ducros said with respect to the compliance verification criteria of the *Licence Condition Handbook* or the licensed activity scope of the licence itself.

I hope that answers your question.

THE PRESIDENT: Let's move to Dr. Lacroix, please.

MEMBER LACROIX: Yes, thank you. Thank you very much, Mr. Shipley, for your presentation and your submission. You have raised a number of concerns that are clearly put, so it was -- it was a pleasure reading your submission.

I want to make sure that I understand correctly what has been said thus-far. OPG will be responsible for implementing the mitigation measures and plans during the site preparation, and staff -- CNSC staff will be responsible for overseeing that the work is complying to the Regulations; am I right?

MR. MANLEY: Robin Manley, for the record, for OPG.

Yes, we are accountable. OPG is accountable for all the protective measures, compliance with the Licence and all environmental requirements.

MEMBER LACROIX: Okay. Okay. And CNSC staff will make sure that -- will oversee the work that is being done, right?

DR. DUCROS: Caroline Ducros, for the record.

That is correct, it is CNSC's responsibility to ensure that everything is carried out as per the plans and within the regulations.

MEMBER LACROIX: Okay, that's great.

One of the concerns from the MBQ is the infilling activities. And I would like to have the point of view of DFO if it is possible, in a sense that what are the challenges that we may expect during the infilling activities and what are the most vulnerable species that could be affected by the infilling activities of Lake Ontario?

THE PRESIDENT: Dr. Lacroix, who was that question directed to?

MEMBER LACROIX: DFO.

THE PRESIDENT: Do we have --

MEMBER LACROIX: If it's possible.

THE PRESIDENT: Do we have anyone from Fisheries and Oceans Canada here?

DR. DUCROS: Caroline Ducros, for the record. We are supposed to have them online. I'm not sure if they are here right now.

MEMBER LACROIX: I see.

DR. DUCROS: However, I would like to add that for any --

MEMBER LACROIX: Yes.

DR. DUCROS: -- infilling activities, any in-water works --

THE PRESIDENT: Oh, there is someone here.

DR. DUCROS: Oh, pardon me.

THE PRESIDENT: Ms. Morton, over to you.

MS. MORTON: Thank you very much. I am DFO and on the line, but I'm no the spokesperson for DFO. They'll be coming online in the afternoon.

MEMBER LACROIX: Oh, I see. Okay. Okay, well, in the meantime could staff start, and then OPG?

DR. DUCROS: It's Caroline Ducros, for the record.

For any in-water works or infilling works as per the environmental assessment a *Fisheries Act* authorization would be required.

We have some Environmental Protection staff here to tell you a little bit more about that requirement, but a *Fisheries Act* authorization would need also some habitat compensation, so I'll pass it back to the Environmental Protection group to give you some more details.

MEMBER LACROIX: Okay, thank you.

MR. SAUVÉ: Good morning, ladies and gentlemen, Members of the Commission. For the record, my name is Daniel Sauvé, and I am an Environmental Risk Assessment officer with the CNSC.

So, first off, for any potential lake infilling that needs to occur, OPG does have a commitment in place that a fish habitat compensation plan would need

to be provided to DFO before any infilling occurs.

Potential issues with lake infilling could result in a spread of the sediment as lake infilling occurs, however there is also a commitment in place for once lake infilling begins that sediment control and erosion control best practises are implemented by the engineering procurement and construction company that would be doing that work.

In regards to sensitive species that may be present on site, lake sturgeon has been identified as a species in Lake Ontario that is listed as a species at risk under the *Species at Risk Act*, so in terms of approvals and like infill design, again, as I mentioned, any documentation must be provided to DFO as well as the Ministry of Natural Resources, Transport Canada, and ourselves for review and approval before work can -- can begin.

To continue, any lake infilling must also be offset through an aquatic habitat compensation program which is governed by the Department of Fisheries and Oceans through the *Fisheries Act* and their fish habitat compensation program.

MEMBER LACROIX: Okay.

MR. SAUVÉ: So, CNSC staff, through our Memorandum of Understanding with the Department of

Fisheries and Oceans will continue to consult and coordinate with them to ensure that the aquatic compensation program is in place and providing offsets for any aquatic habitat loss moving forward.

MEMBER LACROIX: Okay.

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

I would just like to add and compliment my colleague's statement, that these things all have to happen prior to OPG receiving a *Fisheries Act* authorization. A *Fisheries Act* authorization would be issued by Fisheries and Oceans Canada and they will be here this afternoon to -- just to talk about that anymore.

MEMBER LACROIX: Okay. Okay. Thank you.

THE PRESIDENT: Okay, thank you very much to the Mohawks of the Bay of Quinte for your submission; it's greatly appreciated.

We will now move to the next presentation which is from the Canadian Association of Physicians for the Environment, as outlined in CMD 21-H4.36. And I understand that Dr. Cathy Vakil will present this submission.

CMD 21-H4.36

Oral presentation by

Canadian Association of Physicians for the Environment

Dr. Vakil, the floor is yours.

DR. VAKIL: Can you hear me now?

THE PRESIDENT: Yes, we can.

DR. VAKIL: Okay. Well, thank you very much, and thanks for the opportunity to be presenting today.

My name is -- whoops, I'm going to turn my video on here -- there. So, my name is Dr. Cathy Vakil, I'm a Family Physician, retired, in Kingston, and an Assistant Profession in the Department of Family Medicine.

I am here representing CAPE which is Canadian Association of Physicians for the Environment. CAPE is a non-profit public interest organization of physicians, other healthcare professionals and citizens whose goal is to ensure good health for all Canadians by ensuring the health of the planet, through education and advocacy.

Nuclear energy poses significant threats to human health, whether it be through low level exposure to residents living near nuclear facilities, risk of major accident, its link to nuclear proliferation, or the ongoing

dilemma of dealing with the highly toxic radioactive nuclear waste. CAPE continues to lobby for protection of health and safety regarding the issue of nuclear energy.

Ontario, unlike anywhere else in the world, has chosen to locate its nuclear reactors in the most densely populated region in the country, on the largest body of fresh water in the world. This poses extraordinary risk to health and safety to much of the Canadian population as well as millions of Canadians and Americans who rely on the Great Lakes for their drinking water. The CNSC must be mindful of this unusual situation when granting approval for nuclear activities to proceed at the Darlington location.

OPG has not yet chosen a reactor type that it will use on the DNNP site. In fact, no functioning SMR exists worldwide, and the designs OPG is considering are only models, yet they say in their submission, "New nuclear generation at the DNNP sit would not prose any reasonable risk to the public, personnel or environment." How can they claim this when these SMRs do not yet exist and, therefore, there is no historical data as to the risks their proposed SMRs pose? How can the CNSC judge whether the site is suitable when it is not known what the site will used for?

OPG plans to select a reactor type in 2021

and its presence licence remains valid until August of 2022. There is no reason to grant a licence now before OPG announces its chosen reactor.

Waiting until the reactor type is known would give the CNSC the ability to decide with full information if the site is appropriate, as well as offering the public an opportunity to comment on the rector type as well as suitability of the site.

Different reactors carry with them different requirements for the site, different environmental challenges and different risks to safety of workers, the public and the environment. The public deserves much more detail about reactor specifics like design, type and volume of nuclear waste including nuclear inventory -- including radionuclide inventory and accident risk with potential radioactive doses to the public.

A 10-year licence would ensure that the public has absolutely no input as to the reactor type that OPG will choose, which is unacceptable.

Because the proposed SMRs have never been built or used anywhere in the world, and OPG proposes to build them in the most populated area of the country, on the largest body of fresh water in the world, this can be considered a giant experiment, with citizens of the region, downwind and downstream, as the guinea pigs, so they

deserve input into the choice of reactor, at public hearings.

In addition, it is of concern of CAPE that the Provincial Nuclear Emergency Response Plan, or PNERP, Technical Study from the Office of the Fire Marshall and Emergency Management has still not been released to the public despite repeated requests from the Canadian Environmental Law Association since 2019. This document is of huge importance as it includes accident modelling and could provide information that would contribute to determining the appropriateness of placement of different types of nuclear reactors at a given site. In particular, it is critical to outline a plan to provide an alternative drinking water source should Lake Ontario become contaminated with radionuclides from a nuclear accident.

Appropriate contingency plans must be outlined and made public in order for intervenors to provide input as to the suitability of the DNNP site for a new nuclear reactor. The PNERP has significant implications for public health and safety, as evacuation of a large population in the event of a significant radioactive release would depend on the emergency preparedness of the local community.

Clearly, the public is unprepared for a nuclear accident, which was made obvious when there was an

announcement in error of a nuclear accident in January 2020. This resulted in much confusion for the public who did not know how to proceed or whom to look to for guidance, showing that the public is not aware of protocols and emergency preparedness plans in the event of such an occurrence.

It is clear from previous statements from OPG that it plans to use the site for small modular nuclear reactors, or SMRs. OPG states that the original site licence application from September 2009 still applies. However, clearly, the region has changed in terms of population, traffic flow and climate change induced weather events. The original site licence application from 2009 should also take into account projected changes in population, traffic flow and weather events up to the lifespan of the proposed reactors, which would be decades from now, which it does not do. In particular, predicting weather events into the 2050s is impossible as we are not on track to avoid catastrophic climate change. Weather disasters are increasing yearly in frequency and severity at unprecedented and unpredictable rates. In view of this, using nuclear energy at all is more dangerous as time goes on, and a document from 2009 is unable to address changes that will occur decades into the future.

In addition, there are many different SMR

designs that would require different parameters for the site that is different from the original reactor designs considered in 2009, and until the SMR design is chosen, the suitability of the site for it cannot be thoroughly examined and approved.

Because there is no precedent or experience anywhere worldwide with SMRs, there is no data to assess implications of an accident and its radioactive exposures to the public. This makes the choice of site for perhaps Canada's first SMR all the more crucial.

In addition, because SMRs use enriched fuel rather than CANDU fuel, the nuclear waste radionuclides may be quite different and may need modification of present nuclear waste treatment methods, especially if the high-level nuclear waste is to be stored on site until another solution is found as to its, "disposal".

Until new waste management is described in detail, as well as decommissioning plans for the proposed SMR, a licence should not be granted by the CNSC.

Historically, all nuclear reactors have gone hugely over budget, sometimes severalfold. Canadian and provincial governments have already spent hundreds of millions of taxpayer dollars that have been gifted to private nuclear companies to designing SMRs, with no doubt

huge amounts of public money yet to come. This is money that could be put towards cleaner alternatives that already exist and are not only cheaper but whose cost continues to decrease, unlike nuclear energy which is manyfold more expensive.

In addition, SMRs have no place in the mitigation of climate change as they will not be functioning for at least 10 years, which is far too late for our climate emergency clearly making SMRs irrelevant as a solution to our climate crisis.

There is no reason to spend vast amounts of public money on this new untested technology that carries with it health and nuclear proliferation risks that cleaner renewable energy does not.

Now, when Ontario's nuclear energy facilities are ready to be closed down and decommissioned, we should phase out this outdated mode of electricity generation and move forward to implement forms of clean, cheaper renewable energy. In the least, the CNSC should deny the licence and require that OPG choose a site far away from large populations and fresh bodies of water.

It is abundantly clear the CNSC does not have enough information to declare the DNNP site suitable for a new nuclear reactor, and that granting this licence would assure no public input as to the type of nuclear

reactor that OPG will choose.

The CNSC's mandate is to only grant a licence to a company if the public and the environmental health and safety are assured. For this reason, CAPE recommends that the CNSC not approve OPG's request for licence renewal until:

1) The CNSC releases to the public the Provincial Nuclear Emergency Response Plan Technical Study from the Office of the Fire Marshall and Emergency Management, and the OPG licensing application addresses the issues that the study elucidates, with particular attention to the issue of clean drinking water in the event of contamination of Lake Ontario.

2) OPG decides on the specific reactor it plans to use, with details about the risk to the environment and human health and safety that their chosen reactor design entails, and gives adequate mitigation plans for these risks, as well as historical information about how the reactor has performed elsewhere, with detailed data. And, the public has an opportunity to comment on this information at public hearings.

3) OPG provides an update site licence application to replace the 2009 one that reflects its reactor selection, with details of site configuration, including waste storage plans.

And, finally,

4) The CNSC considers that OPG choose another site for its DNNP that is far away from large populations and fresh bodies of water.

Thank you.

THE PRESIDENT: Thank you, Dr. Vakil for your -- your presentation. I don't know if you were here when we opened the session today. In my opening remarks I had made it very clear that our hearing today is not about technology selection. OPG has not chosen a reactor technology, and we will not be talking about that with this renewal of the Site Preparation Licence, so if you didn't hear it, I suggest you check our archive material on that.

And with that, I'm opening it now for questions, and start with Dr. Lacroix, first, please.

MEMBER LACROIX: Yes. Can you hear me?

THE PRESIDENT: Yes, we can.

MEMBER LACROIX: Okay, that's great.

Thank you very much, Dr. Vakil for your presentation.

I was wondering, in the -- in the curriculum of future general practitioners and their training program, is there a full three credit, 45-hour formal course on health physics? A health physics course that will teach them or demystify and dimitify the

fundamental principles of nuclear physics, a course that will teach them the various medical applications of ionizing radiation. And most of all, a course that will provide them with the proper training to accompany their patients when they are about to undergo a medical procedure that involves a nuclear technology.

DR. VAKIL: As far as I know, there is not such course, certainly at Queens University.

MEMBER LACROIX: Should there be such a course, according to you?

DR. VAKIL: I think it would be helpful. I don't know about a full three-credit course, but as far as I know, there's -- there is very little taught about -- about this subject. I think radiology residents probably do, but not in medical school, and I don't believe family -- any family medicine residency has this.

MEMBER LACROIX: Okay, okay. Thank you. Thank you very much.

THE PRESIDENT: Dr. Berube?

MEMBER BERUBE: Yes, thank you for your presentation and taking the time to put this together for us.

I note, you know, one of your questions here, and the general theme is, how can you actually pick a suitable -- how can a site be suitable if you don't know

what kind of technology you're going to use? And so, my question in that framework goes to CNSC.

CNSC, if you could, please, describe the PPE approach and the general validity of that approach given this kind of a licencing hearing.

DR. DUCROS: Caroline Ducros, for the record.

So during the Joint Review Panel process, the assumption was that this would be a multi-phased licencing approach to -- to the project. The environmental assessment looks at the entire lifecycle of the project and all phases. The licence itself only applies to the licence to prepare a site.

So there was a bounding approach taken with the environmental assessment, where a lot of the effects were -- were predicted, and the predicted effects and conclusions at the end of that process were found to not result in significant adverse environmental effects, taking into consideration mitigation measures.

Having said that, for the -- for this particular licence, we're just talking about the licence to prepare a site. But there are elements in terms of site suitability that would require additional information before any site preparation activities can occur. And some of those are, you can call it a box of what that design

would look like, but not the need for details of the technology. And that is reflected in the Licence Condition 15.1, which means that the licensee has to provide some of those documents for compliance review to the CNSC prior to undertaking any of those activities.

However, I go back to this licence to prepare a site, because once a technology is selected there is a future phase where the licensee would have to come back before the Commission in a public hearing and engage with the public about that technology and about the construction licence. So that's a future phase of the project.

When you ask specifically about the plant parameter index -- envelope. That plant parameter envelope, basically what it does is assesses the interactions between the facility and the environment and any predicted effects. So it will be up to OPG to demonstrate that whatever design that they undertake, they demonstrate that there will be no effects that go beyond those predictions of the environmental assessment. And that includes doses to the public, the environment, effluent releases.

MEMBER BERUBE: Okay. Thank you.

THE PRESIDENT: So maybe I'll ask OPG some other points that the intervenor has raised.

Is given that your current site preparation licence is valid until August of 2022, why ask for a renewal now? Why not wait, even though we have just said that you don't need your specific technology selected for the site preparation licence, even in your schedule your site preparation activities don't begin until after the technology has been selected. So maybe two parts to the question.

One is why seek a renewal now? And two, given the kinds of activities that are contemplated under the licence to prepare a site, which of those activities depend on you knowing what the technology is, because that will clearly determine what the footprint is of what you're excavating, etcetera? So OPG?

MR. MANLEY: Robin Manley, for the record.

Thank you for the question, or questions. So first off, maybe why are we applying now? So maybe what I'll do is start with a sort of overview, again, of the schedule.

What OPG sees is a significant need to address climate change and to take action now. And we include all of those kind of considerations in the climate change action plan that we put out last year. And so, proceeding with action now includes setting, you know, a solid, aggressive, viable timeframe for when we would

actually see the first of a kind plant come online.

And that first plant then enables other plants to be built, each of which successively provide non-GHG emission baseload power in Ontario and wherever else people might choose to deploy them. And so there's a -- you know, there's this sort of urgency or imperative around getting on with it and actually making a difference.

So you set a timeline for when you think you could actually achieve results, and then you kind of work backwards from there. So what that sort of tells us is, you know, we are aiming at a first deployment of end of 2028. That's not an official high-confidence schedule, but that's our current target. And that timeline, working backwards, says that we need to start the site preparation activities in 2022.

In addition to that, I would say, you know, here we are, it's June of 2021. The existing licence goes until August 2022. While we're renewing it early, it's not that much early, you know? It's not far in advance of when it would need to be renewed. And in order to actually progress to a project, not only do we need a CNSC site preparation licence, we also need the approval of our Board, our shareholder, which is the Province of Ontario, and they need some degree of certainty that -- before you actually start investing a significant amount of

money in the site preparation activities.

And you know, those kind of impacts that will happen, and obviously we will take mitigation measures, we'll get all the permits, we'll get all the requirements met to protect the environment and minimize those impacts. But you know, there's some impact to doing any kind of activity. So before you undertake those things, you want to have confidence that you actually have the licence in hand that will be valid for the period of time that the site preparation licence -- the site preparation activities will actually take to do.

So if we were to say, well, I have a licence today, I don't need to renew it until next August, so let me start the site preparation activities now. We go to our shareholder and say, hey, you know, let's start. I imagine the question would be, well, how long is your licence valid for? So we wanted to make sure that we had a valid licence in hand that would cover the duration of time that site preparation activities take, which is a number of years. I don't know precisely how long. We haven't figured that out. But it would take a number of years to complete the site preparation activities.

So we need that licence in hand to go and get the approval, in order to proceed to actually do the project and actually have a beneficial impact on climate

change, not just from this project, but from potential future projects that might build upon this one.

Then I think you asked also about what kinds of -- I'm sorry, I've lost my train of thought.

THE PRESIDENT: It was --

MR. MANLEY: If you could repeat the second part of the question?

THE PRESIDENT: You have listed a number of activities that you're planning on conducting under the site preparation licence, and I wondered which ones of those are dependent on your technology selection? Given that your schedule shows you're not going to start your activities until after the technology has been selected, I just wondered, can you start any of those activities before selecting your technology?

MR. MANLEY: Thank you for reminding me. Yes. Robin Manley, for the record.

Honestly, I think that all of them have some -- some factor to take into account. There would be some that would be less so than others. I mean, you need to plan to have an administration building. Where exactly you site it could be dependant on which technology because each of the -- we're currently considering three potential technology developers. We haven't definitively decided it will be one of those three. But each one has a different

physical footprint, different layout. And so where you place the building, the road, where you, you know, run the electricals to or the sewers, will have some dependency on the particular design.

So some of those things really do matter, and so we are actually undertaking planning activities on all three options so that we have it, sort of ready to go, should a decision be granted to proceed and should we have the licence. Some of the activities, I think less so. Grading the land down to the certain level above seas level, I believe the plan is, well, you're going to do that, sort of regardless of the specific technology at hand. And then, you know, some of the commitments that we have made as part of the site preparation licence are commitments we have to undertake regardless of technology.

THE PRESIDENT: Thank you. That's extremely helpful, Mr. Manley. We'll certainly come back to you with more questions around the PPE approach, but there were a couple of other points that the -- that the intervenor has raised.

So maybe I'll ask the CNSC Staff for one of them, and which is around suitability of site and the population density. Does *REG DOC 1.1.1* specify requirements around population density and population projections in assessing suitability of a site, and what

would that mean for this particular site?

DR. DUCROS: Caroline Ducros, for the record.

Yes, it does, and I'll give the speech to Dr. Doug Miller to give some more detail on that.

DR. MILLER: Doug Miller, for the record.

Yes, *Regulatory Document 1.1.1* does have requirements for assessing population density over a reasonable period of time of 20 to 40 years. It's in -- to be precise -- Section 3.3.5 of the document on land use considerations. Not quite the right title, but that's where you find it.

THE PRESIDENT: And so, tell me for this Darlington site, particularly given the concerns the intervenor has raised about proximity to a large metropolis, how does the requirement address this concern?

DR. DUCROS: Caroline Ducros, for the record.

OPG is responsible for ensuring that they do an assessment of the population dynamics and densities around the facility. They did an update in their licence application of any changes to population dynamics in terms of their submission to the CNSC, which we reviewed and approved.

There are other elements to this. There

is a provincial policy on development around nuclear facilities. That means that no residential or increased population can be developed within three kilometres of the facility. And CNSC is there to -- to guide and give expert advice to the province, if ever they should ask about questions related to nuclear. But OPG has to work closely with the municipality.

So I can pass it to OPG to talk about where they are in terms of how they carry on those discussions, and I believe the Municipality of Clarington is in the room either now or this afternoon.

THE PRESIDENT: Thank you. Well, maybe we can get OPG to comment on that, and particularly in light of emergency planning zones then, please?

MR. MANLEY: Robin Manley, for the record.

So I may -- I may call on a couple of members of the team to add additional clarity. So OPG has and continues to work very closely with the Municipality of Clarington, the Region of Durham, on all aspects around population studies, and transportation, and ensuring that we have a good understanding of community growth around the plant. And there are control mechanisms in place that ensure that we meet all of the regulatory requirements to be protective in terms of emergency planning zones around the station.

Maybe I could ask if Ray Davies could describe a little bit about the mechanisms that we use to understand the planning around the plant and the relationship between ourselves and the region?

MR. DAVIES: Thank you, Robin. Madam Chair, my name is Ray Davies, I'm Senior Manager of Real Estate Services at Ontario Power Generation, for the record.

As Robin correctly pointed out, OPG has a strong relationship in terms of the review of planning applications in both the Municipality of Clarington and the City of Oshawa, as well as the Regional Municipality of Durham. We do monitor land use activity out to a 10-kilometre radius from the Darlington site. So that includes parts of the City of Oshawa, as well as parts of the Municipality of Clarington.

The -- most of the growth that is planned in Clarington and the City of Oshawa, is within existing urban area boundaries. So for the most part in Clarington, that would be the communities of Bomanville, as well as Courtice.

But when you look at the -- I think reference was made by the CNSC Staff Member around the tree kilometre radius. When you look at that area, it's -- the -- you know, the typical land use around the station is

predominantly employment. So industrial type uses, which precludes any sensitive land uses, including residential, daycares, nursing homes, hospitals, and the like. As well as we have Saint Mary's Cement as our eastern neighbour.

The lands immediately to the north are designated on the official plan as agricultural or open space, and it's not part of the urban area. So that is not an area that's identified for future urban growth at this time. The -- we have monitored, as CNSC Staff had pointed out, we do monitor since 2011. OPG has been monitoring development activity within that 10-kilometre radius and there has not been a sensitive land use approved within that three-kilometre radius. There was one application for a daycare use, but that was withdrawn and that was considered by Clarington Council.

THE PRESIDENT: Thank you. Thank you. And we'll save the rest of our questions for when the Municipality of Clarington is here.

So, Dr. Vakil, thank you very much for your intervention. I know many of the other issues that you've raised will be discussed over the coming days. So thank you for getting the discussion underway for some critical ones here today.

DR. VAKIL: Can I just make one comment and ask one question?

Firstly, Mr. Manley said that their -- OPG is planning, is looking at the site configuration for the three -- three different ones for the three possible designs. And I think that would be informative for the public to be able to see ahead of time, especially with respect to the waste storage that is going to be on site, presumably.

And the second is a question, is I thought I heard Caroline Ducros just say that the public would have input as to reactor selection. Is that correct?

THE PRESIDENT: Dr. Ducros?

DR. DUCROS: Caroline Ducros, for the record.

My statement was about the public being involved in the future application for a licence to construct. I would have to turn it to OPG in terms of the public involvement for reactor selection.

THE PRESIDENT: Okay. So we won't get into that. Dr. Ducros did not say that the public would be involved in the reactor selection.

DR. VAKIL: Okay.

THE PRESIDENT: And your comment around the site layout, again, that is a new commitment that OPG has made as part of the commitment on the site prep licence on coming up with a detailed site layout.

Okay. So we'll move to our next presentation then, which is from Bruce Power as outlined in CMD 21-H4.9. And Mr. James Scongack is here to make the presentation. So Mr. Scongack, over to you.

CMD 21-H4.9

Oral presentation by Bruce Power

MR. SCONGACK: Great. Thank you very much, Madam President and Members of the Commission, for the opportunity to participate in today's hearing. For the record, my name is James Scongack, and I'm the Executive Vice-President of Corporate Affairs and Operational Service for Bruce Power.

I don't know if it's just the luck of the draw, but I'm the last to present in two hearings in a row. I'm not sure if that's a good thing or a bad thing, but I'll take it.

Just to give you a bit of background in terms of Bruce Power's interested and engagement in this -- in this file, Bruce Power has a very active collaboration agreement with -- with our friends and colleagues at Ontario Power Generation. That collaboration agreement covers a range of areas that the two utilities work very closely together on.

And one of many areas that we continue to collaborate on is the -- is the development of small modular reactors, recognizing OPG is taking the lead on this opportunity for the Province of Ontario, and the Darlington site is also leading that process as potentially the first SMR to be constructed and operated here in Canada.

There are really four key items I wanted to cover in my brief time here this morning, in addition to what we had submitted. The first is just to remind ourselves of the need for the project. That's always an absolutely critical component. We do see electricity demands continuing to increase, especially as we move to more electrification here in the Province of Ontario, in terms of fighting climate change, and also with the -- the eventual removal from service of the Pickering units later this decade, subject to a range of regulatory and other policy decisions.

There is going to be a need for reliable baseload non-emitting power. So we believe there is a -- there is certainly a need for this project. But I think it's also important to recognize that Darlington and Ontario Power Generation have an approved environmental assessment that has withstood a tremendous amount of rigour public engagement. And this site preparation licence

extension is obviously linked with that.

In the case of Ontario Power Generation, we have an experienced licensee that has a track record of operational excellence, community engagement, and also meeting and exceeding regulatory requirements in a number of areas. Obviously, given the past processes that this project has undertaking through the -- and as I mentioned earlier, an extensive panel review and a previous approval of the site preparation licence, all of the activities that are contemplated under this site preparation licence, we believe, are very well-bounded.

You know, it's interesting listening to some of the feedback in this session. On the one hand, Ontario Power Generation is criticized for not being able to bring new generation on earlier, and on the other hand there is some that are advocating to delay the licence. And this is exactly why the approach that the Ontario Power Generation is taking, I think, is so important. Which is, if we are going to have a generation online in order to fight climate change, while meeting all the regulatory requirements and their own operational excellence standard, the consideration in the various paths OPG has taken through a bounding approach is -- is entirely appropriate.

The final thing I would say, and I think this is really important and you know, earlier today I had

the opportunity to participate with OPG in an office opening, virtual office opening of course, in the Durham Region where NPX Innovation opened up a new office. The opening was attended by MPPs, Mayors, and a range of people from the community.

And as demonstrated in these interventions, and as demonstrated even at that event I participated in today, it's very clear that OPG continues to work as hard as they can every day to earn the confidence of the people in the Durham Region and across Ontario. And that includes both people who support their projects, people who have more questions about their projects, and even in cases where people have concerns about their projects, and those concerns are through their public information program. OPG, like all nuclear licensees remains committed to dealing with those concerns, because the public input is absolutely important to the process.

So Madam Chair, in the interests of time, I will leave it at that. Again, I appreciate the opportunity to present, appreciate the opportunity to share Bruce Power's support for this matter before the Commission, and also to thank everybody for the opportunity to also listen in to the varying viewpoints on this important matter. And with that, I'll wrap it up.

I'm happy to take any questions to the extent there are any.

THE PRESIDENT: Thank you, Mr. Scongack. And you're last for the morning, not for the hearing. We still have until end of tomorrow for the hearing.

So let's open it up for questions. Dr. Berube?

MEMBER BERUBE: Well, first of all, I want to thank you for taking the time to -- to come and see us and share your opinion with us of this proposed licence. I have no questions. Thank you.

THE PRESIDENT: Thank you. Dr. Lacroix?

MEMBER LACROIX: A quick question for you. Aside from supporting the site preparation at Darlington, will Bruce Power be involved in any of these activities as an advisor, as a consultant, or for sharing information?

MR. SCONGACK: James Scongack, for the record.

I think that's a great question. So I'd answer that through a couple of ways. It's very clear this is a -- this is going to be an OPG site. OPG is the licensee and OPG is the lead here without a doubt. The continued engagement we have between the two utilities would be -- continues to evolve and as fellow industry peers, we'll work together and support each other.

OPG has -- has sought our input on -- on a number of areas as part of that. So we will definitely be in a support and engaging role, and of course, we're always open to future opportunities. But very clearly, this is OPG in a dominant seat here, driving this project, and we'll continue to support them in any way we can.

MEMBER LACROIX: Thank you.

THE PRESIDENT: Thank you very much. And thank you, Mr. Scongack for again, coming and sharing your thoughts with us today. It's much appreciated.

MR. SCONGACK: I don't feel bad now that I got it wrong and I'm not the last one. So thank you for correcting that, Madam Chair.

THE PRESIDENT: No, that just means you should listen in for the rest of the hearing.

MR. SCONGACK: I definitely will. Thank you for the opportunity.

THE PRESIDENT: We will now take a break for lunch, and we will reconvene at 1:00. Thank you.

--- Upon recessing at 12:14 p.m. /
Suspension à 12 h 14

--- Upon resuming at 1:00 p.m. /
Reprise à 13 h 00

THE PRESIDENT: Good afternoon and welcome back.

Our next presentation is from the Ontario Clean Air Alliance, as outlined in CMD 21-H4.4.

Mr. Jack Gibbons is here to present the submission.

Mr. Gibbons, over to you, please.

CMD 21-H4.4

Presentation by Ontario Clean Air Alliance

MR. GIBBONS: Thank you, President Velshi. Can you hear me?

THE PRESIDENT: Yes, I can, we can.

MR. GIBBONS: President Velshi, Members of the Commission. I'm Jack Gibbons from the Ontario Clean Air Alliance.

Thank you very much for the opportunity to talk with you this afternoon about OPG's application for a Site Preparation Licence for a new nuclear reactor in the GTA.

Today I would like to make two key

submissions.

Our first submission is that OPG's application for a Site Preparation Licence for a new nuclear reactor is not in the public interest since we now have cleaner, safer and lower-cost options to keep our lights on.

Our second submission is that given that we now have cleaner, safer and lower-cost options to keep our lights on, the *Nuclear Safety and Control Act* obliges you to reject OPG's application for a Site Preparation Licence for a new nuclear reactor.

Specifically I would like to draw your attention to two sections of the *Nuclear Safety and Control Act*.

According to Section 3, the purpose of the Act is to limit, is to limit the risks associated with nuclear energy.

And according to Section 9 of the Act, the objects of the Canadian Nuclear Safety Commission are to regulate the use of nuclear energy to prevent an unreasonable risk to the health and safety of persons, to the environment and to national security. And as a result the Act requires you to reject OPG's application for a new nuclear reactor if it will create an unreasonable risk.

In order to determine whether or not a new

nuclear reactor in the GTA, whether the risks associated with a new nuclear reactor in the GTA are reasonable or not, one must compare the costs and benefits of a new nuclear reactor to the costs and benefits of the alternative options to keep our lights on.

The alternative options include energy efficiency, they include wind and solar electricity and they include Quebec water power. So there must be that comparison.

Back in the 1950s we were told that nuclear energy would be too cheap to meter. And in the 1950s and the 1960s and in the 1970s most people in Ontario believed that nuclear energy was the only viable alternative to dirty coal.

But, President Velshi and Members of the Commission, we are now in 2021 and in 2021 the alternative to a new nuclear reactor in the GTA is not a dirty coal plant. Today the alternative to a new nuclear reactor in the GTA are energy efficiency investments, wind and solar electricity and Quebec water power. All of these options are cleaner, safer and lower cost.

As a result it is our submission that it would be unreasonable to subject present and future generations to the risks of a new nuclear reactor given that we now have cleaner, safer and lower cost options to

keep our lights on.

So in conclusion, President Velshi and Members of the Commission, it is our submission that you are legally obliged, pursuant to the *Nuclear Safety and Control Act*, to reject OPG's application for a Site Preparation Licence for a new nuclear reactor given that a new nuclear reactor in 2021 or 2030 would create unreasonable risks for present and future generations, given that we now have cleaner, safer and lower-cost options to keep our lights on.

Thank you for your attention and if you have any questions, I would be pleased to answer them.

THE PRESIDENT: Thank you very much for your intervention, Mr. Gibbons.

I'll open the floor to Commission Members for questions.

We will start with Dr. Berube, please.

MEMBER BERUBE: Yes, thank you for your submission and taking the time to present to us your concerns.

My first question is about actually the documents as presented by OPG and CNSC.

Have you had the opportunity to review those documents in detail, sir?

MR. GIBBONS: No, not in detail.

MEMBER BERUBE: Are you familiar with the general specifications of them?

MR. GIBBONS: I am familiar with their proposal for a new nuclear reactor and I have reviewed the 2018 roadmap for small modular nuclear reactors that was prepared by Natural Resources Canada and OPG and Bruce Power and other members of the nuclear industry.

MEMBER BERUBE: Just in that light, given your understanding and given this licensing hearing is for the renewal of a licence for site preparation, does your organization have any concerns with those activities specifically that are within this hearing parameter?

MR. GIBBONS: Yes. We are asking -- we believe that a new nuclear reactor would create an unreasonable risk.

So we are asking the Commission to reject this application for a Site Preparation Licence since if it doesn't make sense to build, if it's not in the public interest and if it's contrary to your Act to actually build a new nuclear reactor, we don't believe that you should give OPG a Site Preparation Licence, which is the first step in the process.

Given in our view that it doesn't make sense to build a new nuclear reactor, we don't think the CNSC should give them a Site Preparation Licence, which

would just encourage them to spend tens of millions of dollars of more taxpayer money pursuing this option that we don't believe is appropriate.

MEMBER BERUBE: Thank you. I have no further questions.

THE PRESIDENT: Dr. Lacroix?

MEMBER LACROIX: Thank you, Mr. Gibbons, for your presentation.

I have looked at your submission and this is a question that I have already asked in the past of OPG.

I think it's part of the CNSC to disseminate objective scientific and technical information and I will ask this question once again to OPG.

OPG, could you tell us the difference between capacity and generation, that is the difference between power and energy, and say a few words about base load electricity and peak load electricity?

Thank you.

MR. MANLEY: Okay. It's Robin Manley, for the record. I'm going to ask Dave Tyndall to back me up here if I get any of this wrong.

In essence, energy is the physical entity, physical thing, which is used to power lights, to drive cars, for us to walk around. And it's measured in certain units, joules, ergs, etc., etc., whereas capacity is how

much of it you can provide at a given time.

So you might need a very large amount of capacity at certain points during the day when there are larger electrical loads, air conditioning, cooking, everybody has their TVs or computers on, something of that nature, home heating in the winter, where you have an increased amount of capacity that is drawing more energy. But the amount of capacity that you need in different times of the day or different months of the year varies. It's cyclical and is different in different jurisdictions depending on what kind of industrial loads there are.

Energy is the amount of it that you need that is sort of smoothed over a period of time.

So when electricity and energy generation planners are making sure that they have sufficient electricity for the grid, they have to take into account the capacity needs as well as the energy needs, and they need to take it into account in different regions of a province, say, that are closer to the generation sources, that have the right transmission corridors to provide that energy and capacity at that location.

So different forms of energy generation may provide a lot of capacity but only a little energy or it might provide good energy on sort of a regular basis. So when comparing the different energy and capacity options

for an electricity grid, you have to take account of many factors and it's not as simplistic as a price per kilowatt-hour as if that is the only thing that matters.

There's a lot more that goes into that.

I'm not sure if I've answered your question.

Maybe I would just ask Dave Tyndall: Is there anything I should have added, please?

MR. TYNDALL: Dave Tyndall, Director of Engineering for OPG's Nuclear New Build Programs, for the record.

As my colleague Robin indicated, I think he covered it quite well.

It is important that the grid have reliability and stability, which means both energy and capacity. Some are intermittent types of sources that can't be relied on all of the time, so it's important to have base load capacity that is there to address that. There are many different sources for base load capacity but it is important to note that both base load and peaking are sources that are close to the areas of need to prevent things like line losses and make sure that we get that efficiency are critical to having a stable and reliable grid.

So with that, I will turn it back to

Robin. Thank you.

MR. MANLEY: Thank you.

THE PRESIDENT: Dr. Lacroix, any further follow-up?

MEMBER LACROIX: Well, thank you, gentlemen.

I'm teaching a thermodynamics course and you would both get A-pluses. Thank you very much.

MR. GIBBONS: President Velshi, can I respond?

THE PRESIDENT: Of course. Go ahead, Mr. Gibbons.

MR. GIBBONS: Yes. So your colleague asked about base load energy. I'm not exactly sure why he asked the question but I can guess.

Most people when they raise this issue, they say that nuclear provides base load energy, which is absolutely correct, and they point out that wind and solar are intermittent and therefore there is the suggestion that wind and solar cannot replace baseload nuclear electricity.

It is certainly true that the wind doesn't always blow and the sun doesn't always shine. But Ontario and the GTA is very, very lucky to be located right next door to the Province of Quebec, because Quebec has huge hydroelectric reservoirs and those reservoirs can act like

a giant battery for our wind and solar electricity.

So by integrating our wind and solar electricity with Hydro Quebec's reservoirs, we can convert wind and solar into a firm 24/7 source of base load electricity.

So wind and solar, which we are promoting, and energy efficiency and Quebec water power, which can also be a source of base load power, can all replace the need for the proposed GTA nuclear reactor.

I would draw the Commission's attention to a study done at the Massachusetts Institute of Technology about two-way trade in green electrons, which has pointed out that Quebec's hydroelectric reservoirs are the lowest cost carbon-free form of back-up or storage for wind and solar electricity.

Thank you.

THE PRESIDENT: Thank you, Mr. Gibbons.

I'm sure you know that our role as the Commission here is not to comment or question Ontario's energy mix decisions. What we are here for today is around the renewal of a licence at Darlington that OPG already has for the DNNP project. There was an Environmental Assessment done, there was a Joint Review Panel that approved it. There was even a judicial review and the federal court process went through that and the decisions

were upheld around the licence for the site preparation.

So my question to you perhaps, Mr. Gibbons -- I'll start with you and then I'll get OPG and CNSC staff to comment.

What do you think has changed from when they were issued a licence in 2012 to now for you to think that we as a Commission should be questioning the appropriateness of the renewal of the licence?

MR. GIBBONS: Well, certainly in the last ten years the costs of the alternative to nuclear have fallen dramatically. The costs of energy efficiency have fallen, the costs of wind and solar electricity have fallen dramatically due to technological improvements.

According to the International Energy Agency wind and solar now the lowest cost sources of new electricity in most countries in the world, and as a result the International Energy Agency is forecasting that on a global basis 95 percent of the world's new electricity supply during the next five years will be renewables. Also in the last number of years the prices of Hydro Quebec's electricity exports have fallen dramatically. You know, a number of years ago I believe their average price for their exports was around 10 cents a kilowatt-hour, but last year it was just 4.3 cents a kilowatt-hour.

So our point is for you to determine

whether or not the risks of a new nuclear reactor are reasonable or not. The only way you can answer that is by comparing it to the alternatives. If the alternatives are all much, much more expensive or much, much dirtier in terms of climate pollution, then there will be a strong case for approving a new nuclear reactor. But if the alternatives are all cleaner, they are all safer and they're lower cost, then we believe the Act obliges you to reject OPG's application.

And I would say to you in the last ten years the facts have changed. Costs have come down dramatically for the alternative options.

THE PRESIDENT: Thank you.

I will ask first staff and then OPG to comment on this unreasonable risk aspect of the consideration of whether to renew or not the site preparation licence.

Staff?

DR. DUCROS: Caroline Ducros, for the record.

I'll start with just the licensing part of it and then I would like to pass it to the Environmental Assessment experts, and I think the Chief Regulatory Officer would also like to comment.

In terms of unreasonable risk, the way we

process under the *NSCA* and associated regulations is when we receive an application we review that application in terms of whether we can maintain safety to the public, to the workers, to the environment and respect the international agreements to which Canada has agreed in safety and safeguards.

That is the process that we underwent for this licence renewal.

However, I would like to pass it to the Environmental Assessment specialist because that licence renewal is part of a greater picture, including the Joint Review Panel environmental assessment.

So I will pass it to Ms. Nana Kwamena.

MS. KWAMENA: Thank you. I am Nana Kwamena, for the record. I am Director of the Environmental Assessment Division at the CNSC. I would like to speak about how the original Joint Review Panel may have evolved or not evolved over the past ten years.

The Environmental Assessment that was approved by the Joint Review Panel in 2011 is still valid. There is no shelf life on an EA decision as long as the scope of that project remains within the scope of the original EA.

So if and when a technology is selected and an application is submitted, CNSC staff would determine

whether the scope as changed or not to want a new environmental review. At that time we would look at the technology that OPG has selected and see if it's within the scope of the original EA along with whether it meets the regulatory requirements of REGDOC-1.1.1.

And if there are deltas between that original EA and what is submitted by OPG, then we would look into further details and into the type of environmental review that would be required.

If you would like additional information with respect to how the CNSC assesses unreasonable risk, I can certainly pass that along to my colleagues, but I think that should address, along with Dr. Ducros' original response, the question that was posed.

THE PRESIDENT: Yes, it does. Thank you.

Mr. Jammal, did you wish to add anything?

MR. JAMMAL: Yes, thank you, Madam Velshi, just to complement my colleagues.

I would like to reiterate to Mr. Gibbons that our recommendations are based on safety but with respect to cost effectiveness, economic benefits, nor energy policy. So the recommendation before the Commission from staff is based on, as you mentioned, in the Act, with respect to the protection of the environment, the public and the worker, and that is our mandate, Mr. Gibbons. No

business deals, no energy policy and no agreements takes place.

So our recommendation is based on that fact.

And under Section 9 we do publish dissemination of objective information for the public.

Thank you, Madam Velshi.

THE PRESIDENT: Thank you.

Maybe I will turn it over to OPG if they want to add anything to the discussion.

MR. MANLEY: Robin Manley, for the record.

Thank you for the opportunity to respond to this interesting question.

CNSC staff have already provided a thorough response to the technical question. I was going to say somewhat the same thing, not as eloquently.

Ultimately the test before the Commission is: Does OPG meet the requirements under the Act and the regulations? Are we going to ensure safety of the public, the environment, the workers? Are we going to manage safeguards and international obligations?

OPG has done that very well for decades. The best indicator of future performance is past performance. We have met those requirements and we will continue to meet those requirements.

In our licence application we demonstrated that we did check with the site itself what has changed and we have shown that we have the measures in place to protect the environment, the public.

We checked what has changed in terms of codes and standards and we identified if there were any meaningful ones that required to be addressed. And essentially the answer is no. We made a couple of minor amendments to the Commitments Report which are part of the licensing basis for the Site Preparation Licence.

So we passed that test as to whether a licence can be renewed for this application.

And to the bigger picture, has anything changed in the world that is a driver for one to undertake non-GHG emitting projects?

The answer is yes. The situation has changed since 2006 when the original project was started.

The climate change crisis facing the world is more important now than ever before. It's more widely recognized. And there are international expert body studies.

It's interesting that Mr. Gibbons referred to MIT because I also reference MIT to make my point. There could be an interesting debate about public policy in Ontario and what sort of energy sources we should use.

The most recently published report by the International Energy Agency identifies that all clean energy forms, all non-GHG emitting energy forms are going to be needed and that the amount of energy worldwide which is going to be needed to stop us producing GHGs and to hit net zero by 2050 is going to be -- I forget the exact figure, roughly triple what it is now.

So the amount of nuclear that they recommend is going to be needed worldwide is the same percentage, which means tripling the amount of capacity, the amount of energy produced today.

So, you know, it isn't just us that's studying this matter. A lot of experts have weighed in on their different perspectives of it. We study this matter extremely closely and have looked at the Ontario grid. We've looked at the Quebec option, we've looked at the renewables. And the case that we're putting forward publicly and in front of the Independent Electricity System Operator is that all of these forms of power are going to be needed, including new nuclear.

Thank you.

THE PRESIDENT: Thank you, Mr. Manley.

Much as I try to stay away from the energy mix debate, we're getting pulled into it. So I'm going to try much harder as we proceed with this hearing.

Mr. Gibbons, thank you very much.

You've got your hand up. You have the last word on this and then we'll move on.

MR. GIBBONS: Yes. Thank you, President Velshi. I'd just like to respond to the OPG representative. I just want to make it very clear that International Atomic Energy has not said that we need to build a new nuclear reactor in the GTA for Canada, for Canada to meet its climate obligations.

We are very committed, the Ontario Clear Air Alliance, for Canada to meet its climate obligations. And, as an economist, we are promoting the options that are the lowest cost, the cleanest, and the safest.

And we see no purpose, no public benefit, to creating highly toxic radioactive waste that will create risk for future generations for hundreds of thousands of years when there are cleaner and safer and lower-risk options to keep our lights on.

Thank you very much.

THE PRESIDENT: Thank you. Thank you for your intervention today.

We'll move to our next intervenor, and it's a presentation from Terrestrial Energy, as outlined in CMD 21-H4.14.

Mr. Simon Irish is here to make the

presentation.

Mr. Irish, over to you please.

CMD 21-H4.14

Oral presentation by Terrestrial Energy

MR. IRISH: Thank you. For the record, my name is Simon Irish, I'm the Chief Executive of Terrestrial Energy.

President Velshi, Commissioners, thank you for this opportunity to support Ontario Power Generation's site preparation licence renewal application for the Darlington New Nuclear Project.

Terrestrial Energy is a Canadian-based nuclear engineering company and developer of the Integral Molten Salt Reactor, a Generation IV (advanced reactor) technology.

We are headquartered in Oakville, Ontario and directly employ 80 scientists and engineers. Terrestrial Energy was incorporated in Canada in 2013 to develop and deploy our advanced reactor technology targeting the Canadian market. Terrestrial Energy located in Ontario as the province provides access to world class nuclear engineering talent and it is committed to nuclear safety with oversight by the Canadian Nuclear Safety

Commission, an internationally-respected regulator.

Terrestrial Energy commenced the regulatory process over five years ago by the Canadian Nuclear Safety Commission's Vendor Design Review Program. The Canadian market has also established nuclear capability, offering an expert supply chain and a reputation for operational excellence built by nuclear operators such as Ontario Power Generation and Bruce Power.

Nuclear safety is paramount. It is not just a statement of intent, but also a way in which we manage our work and our decisions at Terrestrial Energy. Our commitment to safety-first goals is shared amongst our personnel and with our partners in the Canadian and international supply chain. This attitude is directly related to the Darlington application for renewal of the site preparation licence and manifests itself in three ways.

First, many of our employees come equipped with this attitude, having been trained in the nuclear business at OPG and Bruce Power where standards of excellence are nurtured. To be more specific, the current operations at Darlington are recognized as one of the best in class by the World Association of Nuclear Operators.

The Darlington refurbishment project, which is breathing new life into this Ontario and Canadian

asset, is marked by its safety record while achieving its project goals. These attributes arise from the outstanding commitment from the top of the house to the operators, engineers, and highly-skilled workforce that run day-to-day affairs.

Second, Terrestrial Energy is one of three SMR developers under evaluation by OPG for deployment of our technology at the Darlington site. This work has been in progress since the announcement by OPG in October 2020 and involves a systematic and thorough assessment of each technology with respect to strict compliance with Canadian regulations, codes and standards, and within the requirements of the site preparation licence.

In this assessment, nuclear safety is at the forefront, as it will be throughout the entire lifecycle of the plant with both public safety and worker safety as critical measures of success. Nuclear safety does not stop at regulatory limits, but strives to exceed these, especially as it relates to public safety.

Third, Terrestrial Energy has witnessed firsthand the depth and breadth of the original studies undertaken and how OPG has progressed long-lead regulatory commitments, such as protecting the bank swallow habitat and identifying new flora growth.

The objectives of public and worker

safety, management and environmental impacts, community and Indigenous engagement are all clearly articulated in OPG's original application for a licence to prepare sites where OPG undertook extensive studies, assessments and consultations with Indigenous communities and stakeholders to complete site evaluation studies and develop OPG's Environmental Impact Statement.

This level of due diligence is a hallmark of the nuclear industry in Canada, and a tribute to the diverse group of people who are dedicated to the nuclear effort and to the cause of making Canada a climate-change leader and, at the same time, re-establishing Canada as an advanced nuclear technology leader.

It is widely accepted at home and abroad that nuclear power is part of the solution that helps create the pathway to net-zero emissions. OPG's deployment strategy embodies these positive attributes for local communities, for Ontario, and for Canada.

SMR technology is not technologically different, but it does offer more far-reaching deployment models. These are relevant not just to Darlington but ultimately to other parts of Canada where fossil fuels dominate the landscape.

Terrestrial Energy and its employees are proud to be part of the Canadian nuclear heritage and to

throw their support behind this licence renewal application as a destiny issue for all Canadians.

Thank you very much.

THE PRESIDENT: Thank you, Mr. Irish. Dr. Berube.

MEMBER BERUBE: Thank you, Mr. Irish, for that presentation. As you know, this is not a technology selection construction licence, this is renewal of a site preparation licence. So I'm going to have to really limit my questions to just some specific concerns under this particular licence renewal.

Having examined the documentation, and I'm sure you have because you're involved with the selection process. Do you see any omissions or areas that need to be looked at with regard to technology as it pertains to what you understand of it, sir?

MR. IRISH: No, I'm not aware of those omissions. Our team, and we're working closely with the Ontario Power Generation team as well, none of those omissions, if they do exist, have been brought to our attention.

MEMBER BERUBE: Thank you.

THE PRESIDENT: Dr. Lacroix.

MEMBER LACROIX: Well, thank you very much, Mr. Irish, for your presentation, quite interesting.

I do have a gazillion questions for you, but they fall outside the scope of the site preparation licence. So I'll wait for the next time. Thank you.

MR. IRISH: Thank you.

THE PRESIDENT: Thanks for that restraint, Dr. Lacroix. And, Mr. Irish, thank you for your submission today.

We will go to our next intervention, which is from the Regional Municipality of Durham, as outlined in CMDs 21-H4.41 and 21-H4.41A.

I'll turn the floor to Ms. Baxter-Trahair for the presentation.

Over to you please.

CMD 21-H4.41/21-H4.41A
Oral presentation by the
Regional Municipality of Durham

MS. BAXTER-TRAHAIR: Thank you very much. Is everybody able to hear me okay?

THE PRESIDENT: Yes.

MEMBER LACROIX: Thank you. We do have a presentation I believe Staff is loading. Thank you very much, I see it, perfect.

So, for the record, I'm Elaine

Baxter-Trahair, the Chief Administrative Officer for the Regional Municipality of Durham.

Good afternoon, President Velshi and Members of the Commission. I appreciate the opportunity to speak before the Commission today to share our unique perspective as the project host community.

Durham Region is a proud nuclear community. For over 50 years nuclear electricity has been produced safely here in Durham while powering Ontario's economy. Today the region is home to over 710,000 people, but by 2051 our population is expected to grow to 1.3 million.

Nuclear has provided our community with local jobs and sparked innovation within the business community and our post-secondary institutions.

Durham Region is an informed, experienced and willing host community. The region supports the Darlington New Nuclear Project for several reasons.

OPG is an experienced and respected nuclear operator and a good community partner and a responsible environmental steward.

OPG has a strong safety record and we're confident in their ability to safely operate a New Nuclear facility.

We respect the outcome of the

environmental assessment that this project was subject to, the recommendations of the Joint Review Panel, and the acceptance of the recommendations by the Ministry of the Environment in 2012. We are confident that OPG will ensure that commitments made to the Joint Review Panel will be upheld.

As a municipal leader in climate change mitigation and adaptation, we understand that more areas of the economy applies to shift to electrification. There will be a growing demand for dependable clean energy here in Ontario in the future. The licence renewal is an important step towards continued innovation in the nuclear sector here in Durham.

This project is also well-aligned with the strategic goals and priorities of the Region's strategic plan, specifically to accelerate the adoption of green technologies and clean energy solutions through strategic partnerships and investment, to demonstrate leadership and sustainability and addressing climate change, and to capitalize on Durham's strengths and key economic sectors to attract high-quality jobs.

As detailed in our intervention, our emergency management police and public health staff have established processes and strong relationships with OPG staff, allowing us to work together effectively to

implement provincial and federal plans and regulations.

In our written intervention Durham Region provided comments on sections of the PRSL application, including site characteristics, evaluation of natural external events, and physical design.

We understand that OPG intends to construct a small modular reactor which is likely to have a smaller site footprint than the 4,800 megawatt facility that was initially proposed for this site. Durham Region is a signatory of Canada's small modular reactor action plan and eagerly anticipates the development of this new technology and related supply chain in the Region.

Because of the strength of our relationship with OPG, we are confident that when a technical partner is selected we can work with OPG to understand their needs in terms of site servicing and transportation infrastructure. We know that our teams will connect and we'll review these issues together, and that the organizations will work well to find a way forward.

Since Durham presented to the CNSC in 2018 we have undertaken actions to raise nuclear awareness in the community. Durham Region established an internal nuclear sector working group with representations from each of our departments.

They key goals of this working group are

to increase expertise and promote knowledge sharing among regional staff and council to raise community awareness about the nuclear sector, to attract innovation and strengthen the local economy, and to develop new external partnerships.

Durham, with input from Toronto and OPG, developed a Nuclear Public Education Plan building on our existing communications outreach.

The multi-year plan identifies best practices across a variety of communications mediums to increase nuclear emergency preparedness in the community. Although implementation has been delayed due to the emergency management staff response to COVID-19, we have already made some progress including updated wording and additional advertising during our 2020 and 2021 public alert testing. We have also completed website updates.

One component of this plan that has advanced is a community awareness survey. This survey was developed with Ontario Tech University's Social Research Centre through our CityStudio program. The survey will be launched this month and we will be inviting residents of Durham to participate. The first survey will serve as a baseline, it will help us to understand community awareness and where we need to focus our efforts as we implement the plan.

We will be repeating the survey annually for at least three years and expect to measure changes over time.

Durham Region's emergency management and public health staff were also active participants on the Potassium Iodide Working Group and made significant contributions to the Phase I report. We look forward to partnering in Phase II of the CNSC land initiative.

Community awareness continues to be important to the Region and we are committed to advancing these initiatives.

It will be exciting to watch the Darlington New Nuclear Project develop and learn about it in more detail through the licence to construct process. Between this project check and activities in Durham's other nuclear sites, we anticipate additional hearings in the coming years and we look forward to welcoming you back in person.

We thank the Commission for your attention and we always appreciate the chance to provide our input.

I have several regional staff with me here today who are subject matters experts on the matters covered in our submission. We will be very pleased to answer any questions that you may have at this time. Thank you very much for your time.

THE PRESIDENT: Thank you very much, Ms. Baxter-Trahair.

Dr. Lacroix, questions?

MEMBER LACROIX: Yes, thank you Ms. Baxter-Trahair.

Is DFO online?

MS. EDDY: Yes, I'm here, it's Sara Eddy.

MEMBER LACROIX: Okay, that's great. Well, I do have a question concerning the lake infilling activities. And this morning I had a question concerning the possible effect on habitats. And I've noticed that the Municipality of Durham also has a certain concern with the impact on the water quality.

So could you answer both questions concerning your experience with projects that involve infilling of a lake?

MS. EDDY: Sara Eddy, for the record. I'm the Acting Regulatory Review Manager at Fisheries and Oceans Canada.

So I want to clarify at this point in time, DFO does not have a proposal on this project to review or to assess those impacts on fish and fish habitat. OPG will need to provide information on the project that will indicate location and extent of any infill, and the fish and fish habitat that would be impacted. At that

point we'd have a better sense of the impacts overall.

And we'll be working with OPG and CNSC to discuss avoidance and mitigation measures and incorporate those into the final design.

In terms of water quality, I'm assuming you're meaning (stream lost / diffusion perdue)

THE PRESIDENT: We've lost you. I think you're on mute.

MS. EDDY: Sorry.

THE PRESIDENT: Ms. Eddy, do you want to repeat your response? I think we stopped hearing you after you said -- well, you haven't really received an application, so you can't comment.

MS. EDDY: Oh, my apologies. Do you hear me now?

THE PRESIDENT: Yes.

MS. EDDY: Okay. So I was saying it's difficult for us to asses those impacts of fish and fish habitat, so OPG will need to provide information to us on their (stream lost / diffusion perdue) when they have it available to indicate location of the project, the extent of the infill, if there is any, and which fish and fish habitat would be impacted over all.

And we'll work with OPG and CNSC (stream lost / diffusion perdue) to discuss avoidance and

mitigation measures that can be incorporated into their final design.

MR. LEBLANC: Ms. Eddy, this is Marc Leblanc, Commission Secretary. Perhaps you'll want to close your camera, because we're having connectivity issues. We can't hear you and it's breaking up. So maybe removing your camera may assist. Thank you.

If you're speaking now, it's not assisting.

MR. LEBLANC: Oh, I think we've lost Ms. Eddy. She'll probably be reconnecting.

Here, she's back, thank you.

MS. EDDY: Can you hear me now?

MEMBER LACROIX: Yeah.

MS. EDDY: So I'll start from the beginning again. So I'm Sarah Eddy, for the record. I'm the Acting Regional Regulatory Review Manager at Fisheries and Oceans Canada.

So at this point DFO does not have a proposal to review for this project, so it's difficult for us to assess the impacts of fish and fish habitat. OPG will be providing information on their project when they're ready to propose that, which will indicate the location and extent of any infill and which fish and fish habitats would be impacted. At that point, we'll have a better

understanding of the project as a whole.

We'll work with OPG and CNSC to discuss avoidance and mitigation measures that can be incorporated into the final design selection to avoid or minimize the impacts on fish and fish habitat.

MEMBER LACROIX: Okay, thank you. You've answered my question, thank you very much.

MS. EDDY: Thank you. I apologize for the technical issues.

MEMBER LACROIX: No problem.

THE PRESIDENT: It's part and parcel of this virtual hearing.

Dr. Berube.

MEMBER BERUBE: Thank you for coming and thank you for your presentation. The question I have for you is do you know offhand, or somebody that is on your group with you, what the current population of the Durham Region is right now?

MS. BAXTER-TRAHAIR: Right now it's about 720,000.

MEMBER BERUBE: Any idea -- you must have some idea of projections, where you expect that to go over the next decade or two? Has anybody modelled that for you?

MS. BAXTER-TRAHAIR: Yes, we do model it in 10-year increments. The current modelling goes to 2051

and it's projected to grow to 1.3 million.

MEMBER BERUBE: Any idea of proximity of the plant? I mean, obviously that comes down to contractors, zoning, all kinds of things like that. But is that a consideration for you in terms of growth, it's moving in that area? Where is that actually going?

MS. BAXTER-TRAHAIR: Yes, there's certainly growth in Clarington anticipated. We are awaiting final confirmation of the expansion of the GO Train east out to Clarington, so there will certainly in the Courtice and Bowmanville area be growth, but significantly distanced from the plant for obvious reasons. There's more of an industrial area down by the plant.

And we also are looking forward to the OPG Headquarters moving to Clarington. So the GO Train will be serving that growth quite effectively along with our own transportation system.

MEMBER BERUBE: Thank you. That's all I have to ask there.

THE PRESIDENT: Thank you. Maybe I'll turn to OPG. In the written submission there's some very specific questions and recommendations, you know, anything around, you know, volumes of material, excavated material and hole routes and so on.

I just wanted to give you the opportunity

to comment on that or is this something that you will be discussing and consulting and providing information at a later date?

MR. MANLEY: Thanks very much for the opportunity. Robin Manley, for the record.

We certainly very much appreciate the thoughtful intervention from the Region, you make very good points.

The OPG team has worked very closely with the Region of Durham and the Municipality of Clarington in all sorts of matters, including the emergency preparedness. I see James Kilgore on the line there and Transportation Planning.

We do look forward to the relocation of essentially our head office, our campus, basically all of our non-plant staff to the region in the forthcoming years and will continue to work closely with them and particularly paying attention to the important recommendations that were made in this intervention such as our ongoing commitments to produce an environmental management and protection plan for the site. I know the Region's intervention called for that.

Their recommendation to work with the Central Lake Ontario Conservation Authority, CLOCA, we'll do that. And essentially, all the points that are made in

there, our team is looking closely at those and look forward to ongoing discussions with the Region about the opportunities to work together.

Thank you.

THE PRESIDENT: Very good.

Ms. Baxter-Trahair, a quick question for you. With respect to you know the policy around land development and restricted use of land in the proximity of DNNP, can you comment on how much of a constraint is that to growth in the area?

MS. BAXTER-TRAHAIR: I will give you a very high-level response and then turn it over to our subject-matter expert.

I think there's sufficient space in the area that that should not be an impact, and the residential growth we're looking at will likely be at north of the 401 where this is south and north of the rail corridor.

But I would like to turn it over to Colleen Goodchild who is the Manager of Policy, Planning and Special Studies in our Planning and Economic Development Department, and she can be much more precise than I.

Thank you.

MS. GOODCHILD: Thank you, Elaine, and thank you, Madam Chair.

For the record, as Elaine said, my name is Colleen Goodchild, Manager of Policy, Planning and Special Studies at the Region.

Through our policy directions that we referenced in our submission for our review of our Durham Regional Official Plan, we wanted to enshrine in our policy language for our official plan the three-kilometer zone or automatic action zone that's defined as Curtis Road to the west, Baseline Road to the north, and Bowmanville Avenue/Regional Road 57 to the east, and the lake to the south.

In that area, as Mr. Ray Davies from OPG already mentioned, some of the land uses there, St. Mary's Cement, no new residential, no sensitive uses permitted, as well as the employment areas and the OPG Headquarters.

So, you asked, Madam Chair, about concerns related to any limits to growth in that area and I think there isn't a concern because it is a primarily employment area around the site, and focuses of growth as Ms. Baxter-Trahair mentioned, are the Go-station and Go-East extension that are north of Baseline Road, for the Curtis, but then also in Bowmanville west, in the Municipality of Clarington in Bowmanville.

Hopefully that helps answer your question.

THE PRESIDENT: It does. Thank you very

much for that.

And thank you Ms. Baxter-Trahair, for your intervention and appearing in front of us today; it's much appreciated. Thank you.

MS BAXTER-TRAHAIR: Thank you very much.

THE PRESIDENT: Our next presentation is from the North American Young Generation in Nuclear, NAYGN, as outlined in CMD 21-H4.8. And Mr. Matthew Mairinger is here with us to make the presentation.

The floor is yours.

CMD 21-H4.8

Oral presentation by the

North American Young Generation in Nuclear (NAYGN)

MR. MAIRINGER: Matthew Mairinger, for the record.

I would like to start by thanking the Canadian Nuclear Safety Commission for providing an opportunity to submit an intervention for the Ontario Power Generation, to renew its nuclear power site licence for the Darlington New Nuclear Projects.

I have eight years of experience working for Ontario Power Generation at both the Pickering and Darlington nuclear sites. I've worked in Project Controls,

Minor Modifications, Reactor Safety, Stakeholder Relations and I currently work in Performance Engineering at Darlington.

I earned my Bachelor of Engineering degree in Nuclear Engineering from Ontario Tech University. I am taking graduate courses in Nuclear Engineering. I am a Professional Engineer in the Province of Ontario and am a Project Management Professional.

I also live in Bowmanville less than 10 kilometers from the sites.

I am here representing North American Young Generation in Nuclear as a Canadian Operating Officer. NAYGN is an association of young professionals and students passionate about the nuclear industry and is focussed on professional development, public relations, networking and community outreach. There are currently over 100 chapters across North America and 14 right here in Canada.

I want to start with a broad perspective. Fossil fuel air pollution causes almost one in five deaths globally each year, and already the global average atmospheric carbon dioxide is over 419 parts per million. This is the current situation. This is the reality we have.

As global citizens we need to rapidly

adopt technologies that will help us reach our Net-Zero targets. Ontario, thankfully, already has one of the cleanest grids on the planet, thanks to around 60 percent nuclear in combination with hydroelectricity and other clean sources.

With a push for more electrification, such as transportation, we will need new, clean, reliable, baseload power more than ever.

I am excited for the DNNP for several reasons:

1. As an Engineer, I love optimization. Life is full of compromises and risk, so finding the right balance is key. When accounting for the deaths from accidents and air pollution, and therefore the safety, and combining the greenhouse gas emissions, nuclear is a clear winner.

2. One argument I hear against nuclear is the speed of deployment: It's too slow, or, we already have a climate emergency and we need solutions now.

I want to clear up this misunderstanding with facts. All of the countries like Sweden, France and Belgium that have decarbonized the fastest have utilized nuclear in their strategy. This is because nuclear, as a non-intermittent source, has a high-capacity factor, over 90 percent, and a long operating life, usually around over

60 years.

California and Germany offer great case studies of locations where nuclear is being phased out with the intention of reaching 100 percent renewables, and these have failed miserably. At these locations, emissions are rising, there are rolling blackouts, and the cost of electricity has skyrocketed. In all four IPCC illustrative pathways that keep us to 1.5 degrees Celsius warming, there is a substantial increase in nuclear power in the coming decades. Net-Zero Needs Nuclear!

3. I also like to look at the lifecycle materials required for the energy and the land required for nuclear. The OPG DNNP Ecological Risk Assessment concluded that, and I quote, "that no residual adverse effects on human health or non-human biota are expected as the result of the DNNP activities over the lifecycle of the DNNP facility."

The DNNP site evaluation and licence application has also been reviewed against applicable regulatory requirements, current codes, standards and practices, as well as current site baseline data. Because nuclear is incredibly energy dense - we're talking about 1 million times greater than that of traditional energy sources - the land footprint for nuclear is much less per energy produced and that means more room for flora and

fauna. This also means that the materials required to be mined, processed, and shipped are much less than other energy sources. Less extraction of raw materials, less processing, and less shipping. I'd say, yes, please!

4. Small modular reactors represent a new market sector where nuclear can help decarbonize -- we're talking about cargo ships, isolated communities, and remote industrial sites such as mining, just to name a few.

The modular design also means that developing countries, communities, can start small and expand as the population grows, or as more capital is unlocked.

Some of the SMR designs utilize a much higher temperature, so opportunities such as district heating, hydrogen production, and/or desalinization also become opportunities.

I am part of the International Nuclear Delivery Team for the United Nations Conference of Parties, also known as COP, and our 2021 position paper has been endorsed by over 150 associations with over 80,000 members from around the world stating that Net-Zero Needs Nuclear.

Our petition to ensure nuclear is recognized as essential to meet climate targets already has over 3500 signatories demonstrating that projects such as DNNP are critical to hitting our Paris Accord targets and

positioning Canada as a world leader in clean technology.

What this project proposal really offers is an economic and environmental benefit not only to the project site, but also opens the door to be deployed throughout Canada and internationally. This expansion could be the solution for off-grid mines and remote communities to replace their current diesel generating sources with clean, safe and reliable nuclear power.

In closing, I truly believe that nuclear power is the safest, the cleanest, and the most reliable electricity production method that should be one of the main strategies that humanity utilizes to combat climate change and to protect the environment.

I am happy that OPG, a company with a long history of reliable operation and a company with a 2040 Net-Zero commitment, is spearheading this project. As a young professional that is passionate about the well-being of our environment for generations to come, I urge you to take this crucial step in renewing the power reactor site preparation licence. Do it for the planet!

Thank you very much.

THE PRESIDENT: Thank you, Mr. Mairinger.

Dr. Berube?

MEMBER BERUBE: Well, yes, thank you for putting this presentation together. I want to draw

particular attention to your written submission which I found to be informative and well done, so thank you for putting it together. I also enjoyed it.

But I have no questions for you.

THE PRESIDENT: Okay. Dr. Lacroix?

MEMBER LACROIX: Yes. Thank you very much for your presentation and also for the written submission - quite interesting.

You mentioned that there are 3500 signatories of the 2021 position paper. Could you tell us more about these signatories; are they organizations or individuals? And, what is exactly the 2021 position paper? Is it geared at the climate change, combatting climate change? Or, is it geared at promoting nuclear power?

MR. MAIRINGER: Thank you for that question.

Matthew Mairinger, for the record.

So, it's over 150 associations across the world, so that's Women in Nuclear, North American Young Generation Nuclear. These are large organizations. And as part of that, the total amount of members as represented are over 80,000. And the position paper is really demonstrating why Net-Zero Needs Nuclear. So, it outlines how it can hit our climate targets, how it can relate to the sustainable development goals, how it commits to

isotopes, and all of the beneficial results that nuclear provides.

Thank you.

MEMBER LACROIX: Okay, thank you very much.

THE PRESIDENT: Thank you for your submission, Mr. Mairinger.

We'll move on to our next intervention which is a presentation from Durham Nuclear Awareness and Canadian Environmental Law Association as outlined in CMD 21-H4.37, and 21-H4.37A, and Ms. Kerrie Blaise is here to make the presentation.

Ms. Blaise, the floor is yours.

CMD 21-H4.37/CMD 21-H4.37A
Oral presentation by the
Canadian Environmental Law Association

MS. BLAISE: Thank you, President Velshi and Members of the Commission.

It is great to join you all today, and just give me one moment as I adjust my screen. Great.

As you mentioned, my name is Kerrie Blaise, and I am counsel to the Canadian Environmental law Association and Durham Nuclear Awareness for this matter.

Joining me today will be Professor M.V. Ramana, who was our expert and he assisted in our review. He is a professor at the School of Public Policy and Global Affairs at the University of British Columbia, and he has extensive knowledge and expertise in nuclear non-proliferation safety risks, and nuclear reactor designs.

Next slide, please.

And next side, one more time. Thanks.

So, today I'm going to present three key findings.

Next slide.

Briefly, in 10 minutes. So, in 10 minutes I would like to overview three key findings we made in our review.

So, first, that is premature for OPG to be seeking a 10-year licence for the Darlington site when OPG has publicly committed that within 2021 it will be selecting a reactor technology.

Second, our review indicates that this proposed undertaking is fundamentally different from the existing licence and the approved federal environmental assessments.

And, third, the licence application that was submitted to the CNSC fails to adequately address

significant changes which have occurred since the 2009 application, which includes the environmental impact statement as well as the federal environmental assessments.

Next slide, please. Thanks.

So, to our first point, that it is premature to renew OPGs site licence given they will be reportedly selecting a technology in 2021, we submit in our respectful view this is bait-and- switch. So, OPG has stated they want a license as-is. There's no change, there's no increase in scope, there's no reactor technology. But that, on its face, is only a partial picture.

OPG would have us believe this is a site for some fences, to remove some vegetation, to grade the lands, however, we know from public statements from OPG that they wish to site what could be Canada's first small modular reactor in Darlington. And, on this slide, I have highlighted a number of public statements made by OPG, including that within 2021 they will be selecting an SMR technology to be deployed at the site. By 2028 they intend to construct this site, and by the early 2030s they hope to be contributing to the electricity grid.

CELA and DNA recognize that each of these bullet points require various licensing proceedings. However, it remains our submission that it is premature to

consider a 10-year licence currently when the reactor technology will be chosen this year. And to this point, we urge the CNSC as Canada's Nuclear Safety Commission, to seek clarity from OPG regarding the need, the purpose, the intent of a siting in SMR at Darlington.

Earlier today, OPG stated they needed to renew their license early so that they could act now in response to their climate action plan. In Darlington's -- in OPG's, rather, climate action plan they reference their plans for SMRs at Darlington, which again underscores the need for a reactor technology to be before the Commission in this proceeding.

Next slide, please.

So, I'd like to highlight a number of recommendations we made, particularly the fifth and sixth as copied on this slide.

So, first, before proceeding with this licensing matter, the CNSC should direct staff at OPG to revise all licensing documents, all licensing application documents to avoid implying that no change will occur. This is disingenuous to the public hearing process and it also paints a partial picture of what is planned at the site. And the Commission must make a decision regarding site suitability. It's not whether the site is suitable for fences, for grading, for some clearing of land, but

whether the site is suitable for a small modular reactor within 10 years, and you know the population increases, land use changes, and the impact that poses to accidents risk and emergency preparedness.

And, per Recommendation 7, it is premature to consider a 10-year licence when we know within 2021 the reactor technology is coming.

Next slide, please.

So, to our second finding of three. So, secondly, we found that this undertaking is fundamentally different from the existing licence and approved federal environmental assessments, and it was the EA from the Joint Review Panel that found if it was fundamentally different, the existing environmental assessment would no longer apply.

In our submission we go through a number of these differences of which I will just briefly touched on four. The first is reactor design. The original license application from 2009 and the environmental assessment considered three water-cooled designs, two pressurized light water reactor designs, and one pressurized heavy water reactor design.

In contrast, what was considered then, OPG is now focussing on a boiling water reactor design, a molten salt reactor design, and a high temperature reactor

design. And we know this because of OPG's announcement that it is advancing engineering and design work to work with three grid scale SMRs with GE Hitachi, Terrestrial Energy and X-Energy, specific to the Darlington site.

Of these three SMR designs, none of them have been licensed for construction in Canada, nor have any of them appeared before the Commission in other proceedings.

There is currently no precedent the Commission can rely upon which merits closer review of what is being asked in this site renewal application.

Next slide, please.

We also must assess how OPG's documents and CNS staff's review holds up in light of the risk of multi-unit accidents. This is a real potential given SMRs are not proposed just as one unit alone on a site, but often in multiples, and given the existing nuclear power plant at Darlington that must be a consideration in tandem.

Fourth, is the suitability of the site. So, again, we say to the Commission the test the Commission must turn its mind to in reading Section 24(4) of the *Nuclear Safety Control Act*, it is in protecting the environment and public health, is this site suitable for new nuclear for the next 10 years taking into account emergency preparedness, accidents, land use planning

changes and population increases.

Next slide, please.

So, in light of our findings we do make, again, more recommendations to the Commission. I'll just highlight Recommendation 8, which is because of these fundamental differences the CNSC cannot rely upon the existing plant parameter envelope, the PPE, nor the environmental assessment that was previously approved.

Next slide, please.

In light of the proposed SMRs at Darlington, the CNSC should be requiring the most stringent of siting requirements and this includes site preparation studies to assess matters including the high waste stream, the waste streams that may remain on site at Darlington given that SMRs do produce waste which is fundamentally different from our CANDU reactors.

Next slide, please.

And the next side, again. Thank you.

So, our third and final submission to the Commission is regarding omissions in the licence application.

So, again, OPG attempts to rely upon its 2009 licence application, but there's been many, many changes since 2009 which have not been adequately

addressed, and the information before the Commission is insufficient. I highlight a number of these areas on this slide which includes public awareness. It does not take into account lessons learned from the Pickering text alerts that went out in error, nor does it include a critical study PNERP technical study. This was a study that was promised years ago, in 2019. CELA has been trying to obtain a copy. We are aware that the PENRP technical study which reviews matters such as air emissions and radiological emissions in the event of an accident, and how they travel throughout the region and would impact Lake Ontario and our drinking water supply. This study is with the Commission but is not yet publicly available.

And to Dr. Cathy Vakil's comment from earlier today, until the PENRP technical study is released, there should be no further licensing matters querying emergency planning and its sufficiency.

Next slide, please.

And I will say next slide, again.

In light of time, I will just highlight Recommendation number 19, which is the criticalness of evaluating future population growth for the 10-year licence that OPG is seeking.

Currently, CNSC's staff of evacuation time estimates, for instance, which is directly validated to

population growth only goes out to 2028. This is not the life-span of the proposed SMRs, nor is this the full span of the licence which is being requested.

Next slide, please.

And if I could go to the final side. Thank you.

So, for these three reasons we do ask that OPG's request for a 10-year licence be rejected. It is premature. The reactor technology will be selected in 2021. And, on the face of the documents, there are critical deficiencies such that the Commission does not have the sufficient information it needs in order to make a licensing decision on this matter.

Thank you.

THE PRESIDENT: Thank you, Ms. Blaise. And I'll open the floor for questions, and we'll start with Dr. Lacroix.

MEMBER LACROIX: Thank you, very much, Blaise, for your presentation and also for your written submission. I was wondering, has the PNERP technical study -- this is a question for Staff. Has the PNERP technical study been used in the reviewing in the site licence application? And is it possible to reveal to -- if the answer is yes, is it possible to reveal to us some of the conclusions of this study? And will this study be made

available to the public this summer?

DR. DUCROS: Caroline Ducros, for the record.

So there is a PNERP study that is available on the CNSC -- sorry, the PNERP itself is available and linked by our CNSC website. The technical study, the CNSC Staff received in February. And I will pass it to Ms. Kathleen Heppell-Masys to talk about how the CNSC is asking for the province to release that study.

I believe the province may also be here to discuss that. But I did want to put that in the context for this licence to prepare site, because the activities on site, for this licence to prepare site for the following -- that is being requested for the following 10 years, don't involve any nuclear operations, and nuclear related operations.

And therefore, in terms of the PNERP, it doesn't apply at this phase. It would be something that would apply at a future phase, if OPG were granted this licence, and if and when they come back for a licence to construct. Having said that, I can pass it to Ms. Kathleen Heppell-Masys.

MEMBER LACROIX: Thank you.

MS. HEPPELL-MASYS: Good afternoon. My name is Ms. Kathleen Heppell-Masys. I'm the Director

General of Security and Safeguards, for the record.

And I don't have very much to add to what Ms. -- Dr. Ducros has just mentioned, with the exception that indeed, we did not use the technical study report as input to our review of the licence proposal that you have -- that you have here in front of you. We understand that the technical -- well, first of all, the province is also online, so now would be a good time to probably ask them to comment on that. But certainly, our understanding is that the technical study will serve as input for the next revision of the PNERP report.

MEMBER LACROIX: Okay.

MS. HEPPELL-MASYS: And so the province may comment on that. And just as a -- we did receive the report, it's true, in February and we've also encouraged the province to release the report publicly. So with that, back to you Dr. Ducros.

DR. DUCROS: Caroline Ducros, for the record.

Just to wrap that up, once the province does release the report, the CNSC's website does link to the provincial website and so we would link to that report.

MEMBER LACROIX: Okay. So you -- you do not have -- you have any -- you have no idea when it will be release next summer?

DR. DUCROS: I would -- I would suggest that I think the province is in the room, and perhaps they would be in a better position to state when they are intending on releasing --

MEMBER LACROIX: Okay. Yes.

DR. DUCROS: -- the technical study.

THE PRESIDENT: So can we get the office of the Fire Marshall and Emergency Preparedness?

We have asked that this study be released publicly numerous times, as the Commission. So can you please tell us why it hasn't been released and when do you expect to release it?

MR. KINCHLEA: Yes, thank you. Good afternoon, and thank you, President Velshi and Commission Members for inviting us to answer questions from the Commission related to provincial nuclear emergency management as it relates to the Ontario Power Generation's application to renew the site preparation licence for the Darlington New Nuclear Project.

My name is Richard Kinchlea, for the record. I am the Deputy Chief of Planning and Program Development with the Office of the Fire Marshall and Emergency Management.

We do acknowledge the delayed release of the tech study was -- the technical study, was largely due

to competing priorities of our Covid-19 pandemic response and an active flood and fire -- wildfire season, and we understand this concern.

The PNERP technical study will be publicly released, posted, later this month.

MEMBER LACROIX: Okay.

MR. KINCHLEA: The posting will be done in stages. The first stage will be a posting on Emergency Management Ontario's webpage, directing people to write to our askofmem@ontario.ca for a copy of the PD file. The second phase will have the report be posted in html, in accessible format. Due to the complexities of the -- and the length of the report, it will take some time to convert that over to the html.

So those are the -- that's the plan for releasing the document.

MEMBER LACROIX: Thank you very much for the answer. Thank you.

THE PRESIDENT: Yeah. Mr. Kinchlea, what's a bit of time or a lot of time to get it in the more accessible format?

MR. KINCHLEA: It's competing priorities with a number of resources that are tied to different things within the provincial government. We don't have an internal IT department within EMO to do that, so we have

rely on resources across the province to -- to do that. And with competing priorities, it's been put into a -- into a work queue to be translated and converted into html following the posting of the PDF -- or the posting of the announcement of the -- where you can ask for the PDF to be sent to you.

THE PRESIDENT: Okay. We'll take this offline with CNSC Staff and see how we can expedite that. I mean, I totally appreciate the competing priorities that you're talking about, but we wouldn't want this to be more than weeks, and if it is going to be more than weeks, we are going to have to find an alternate solution for this.

And while you're here, the intervenors also raised issues around the false alert and learnings from that, and lack of awareness or preparedness by the public to respond to a nuclear emergency that seemed, according to the intervenor, to have come from that particular incident. Do you want to comment on that and this particular application that's in front of us?

MR. KINCHLEA: Well, I guess I can talk around the alert ready system and the error alert. And it should be noted that, you know, the alerting system is for -- this is an all hazards alerting system and the error alert.

What occurred there was an incident

between our testing systems where a templated response that's used in the test is -- was used with nuclear -- a nuclear scenario in there, and that was the error. But all around it's generally a system across Ontario. You've seen the alerts go out for -- on our phones for various reasons in the past.

It is a -- it is set up for an authorizing official to, you know, to make a request to have an alert put out within this designated area, and once that has been validated an alert can go out.

In response to the alert itself, or the error alert, we've gone through, you know, we've gone through the investigation reporting, and I'm pleased to say that all the recommendations within the report have been completed. With a caveat to say that there's two that are ongoing, merely because they contain information and training for ongoing training with existing PEOC members, Provincial Emergency Operations Centre members, and new employees. So that's an ongoing thing.

But all the recommendations have been covered off for the error alert.

THE PRESIDENT: And thank you.

So from your perspective, as far as this particular renewal of the site preparation licence, are there additional commitments that you would expect to see

from OPG in light of learnings from that incident?

MR. KINCHLEA: I don't think so, because we've -- we've really covered off the circumstances and, you know, the events that led up to the error alert, and really don't rely on externals. It was more internally, as it said, it was -- it was during a testing exercise. And I don't expect that except for continuing communication and collaboration with OPG and other stakeholders, you know, that we continue to take those lessons learned and, you know, operate efficiently.

THE PRESIDENT: Thank you.

Dr. Berube?

MEMBER BERUBE: Well, thank you, Ms. Blaise, for your presentation. Again, I have to reiterate something the President has been saying all day, and that is this is not a technology selection hearing, now is it a construction licencing hearing. So we're going to stay away from SMRs as a direct result.

But one of the assertions you did make is that you said that the -- fundamentally there's -- there's differences from the initial EA in this -- this particular relicensing hearing. And I think that we should explore that, and I would like to ask CNSC to give us some understanding as to why your claim that the EA has not changed, knowing that over 10 years things can drift a bit.

I mean, like, but give us some understanding why you would -- why you believe that the EA is still intact and valid.

MS. DUCROS: Caroline Ducros, for the record.

I will pass this to the environmental assessment expert, Dr. Nana Kwamena.

DR. KWAMENA: Hello, I'm Dr. Nana Kwamena, Director of the Environmental Assessment Division.

So as I stated earlier, at this time, OPG has not indicated their technology selection. They've indicated that that will be coming later this year, but CNSC has not received an application. So we've received the application for the licence to prepare a site and those activities that they have presented as part of their application are -- remain the same as what they presented back in the early -- in 2009.

For that reason, that is why that we have said that there is no change in the environmental assessment, because the activities that are being proposed as part of this licence are no different than what was being proposed in the original application.

However, I would just like to note that as part of the JRP recommendation number one, it was understood that if and when OPG comes for their selection

of a technology and applies for a licence to construct, that the CNSC would need to determine whether the environmental assessment is still applicable. So there is that opportunity for CNSC Staff to look at OPGs submission where they would have to demonstrate to us that they're within the bounds and conclusions of the original EA and then we, as CNSC Staff, would also have to make that determination to see if the submission that is provided to us is within that -- within those bounds.

So it is because there is no change in what they're applying for at this time, based on what's been submitted to us, that we conclude that the EA still applies. We will make a new determination when they come with an application and a technology selection.

MEMBER BERUBE: Thank you.

DR. DUCROS: Caroline Ducros, for the record.

I would just like to add to my colleague's response that in addition to verifying that the environmental assessment had the entire scope and that the activities were -- are the same as the current licence. OPG did have to submit in accordance with the JRP commitments, which you can find in our CMD 21-H4 in the Appendix E, certain updates.

So new baseline -- additional baseline

studies as we noted in our presentation, the identification of species at risk that are additional to the ones that were there before. So they had to provide in their licence application any updates to show how the environment may or may not have changed around their application, and those were taken into consideration in the CMD and the CNSC Staff's recommendations.

THE PRESIDENT: Ms. Blaise, I'll come to you in a moment. I just have a follow up question for CNSC Staff.

Just wanting to make sure I fully understand the process and I understand the JRP, as well as the -- the Federal Courts, you know, approved, authorized the PPE approach and that the technology selection is not required for the site prep licence, but it is for the construction licence. But walk me through how this would work.

Say OPG gets the renewal of the site prep licence, they select a technology, they start their site prep, then they at some point -- or maybe they don't start -- but say the do and they go, well, you know what? It's kind of within the planned parameter envelope, but maybe not quite, you know, we've heard from the intervenor that this is significantly different undertaking.

What -- what does that do to the site prep

activities that have already taken place then? Can you help me understand that? So it's before the construction licence application, but that the site prep activities have started.

DR. DUCROS: I'm sorry, President Velshi, was this directed to CNSC?

THE PRESIDENT: Yes. I'll start with CNSC.

DR. DUCROS: Okay.

THE PRESIDENT: Sorry, I should have said that at the outset. Yes.

DR. DUCROS: Not a problem. So in terms of the -- the licence condition 15.1, all the JRP commitments have to be -- that apply to 15.1, have to - and to the licence to prepare site that are related to site prep activities have to be fulfilled before any activities can take place. But I would like to pass this question to the Waste and Decommissioning Division in terms of the preliminary decommissioning plan aspect. Or you're not looking for those aspects, you're just saying what happens if it's outside the scope?

THE PRESIDENT: You're right. Right, and they've already started the licence -- the site prep activities because they have a licence to do so.

DR. DUCROS: Caroline Ducros, for the

record.

So site prep activities will be based on what they'll -- for some of those site prep activities OPG needs to have a sense of what technology that they will be choosing, and that has to be done before they can conduct site prep activities and send it to us.

If OPG decides to go ahead and do site prep activities that are outside, providing that they are meeting -- this is basically conventional health and safety hazards when they are starting site prep activities, there's grading and other matters around that. If they go and it doesn't work for them, that's to me, a risk that OPG is taking.

They would have to come to us at a future stage to make sure that everything is okay in terms of the prep, before they can do a construction licence and they'd have to come before the Commission for that decision. So in a sense, I think this is OPG's question to answer in terms of if they don't get it right from the CNSC's compliance verification process though and our interest, is that there are no sediments entering the lakes, that all mitigation measures have taken place, that they meet the predictions of the EA, that the environments and health of persons is protected.

THE PRESIDENT: Thank you.

OPG, can we hear your perspective on that, please?

MR. MANLEY: Robin Manley, for the record.

So that covered a wide range of different topics there. So President Velshi, if I don't quite get on point with what you're looking for, do please tell me.

So first off, I would say we will not undertake site preparation activities that are outside the bounds of the licence or the EA.

THE PRESIDENT: Okay. That's all I needed to hear. Okay.

MR. MANLEY: Right.

THE PRESIDENT: We will verify that before you undertake any site prep activities.

MR. MANLEY: That is correct.

THE PRESIDENT: Okay. As opposed to getting ready for the construction licence application. Okay. Thank you.

So, Ms. Blaise, back to you.

MS. BLAISE: Thank you, President Velshi.

I just wanted to respond to the discussion around the fundamental differences between the PPE and changes that could occur if it was an SMR. And so, if the conclusion is that at this point in time it's not a matter before the Commission, then why this pretense from OPG that

they are looking to site SMRs at this site? Because it was on a public statement that have been made, and I do worry about the information that's publicly available.

So when there hasn't been -- to Member Berube's point earlier, this is not about SMRs, this is not about technology. We believe it is. But there hasn't been that very first step of sorting out, what are the issues, so the public actually knows what are the issue before it? And without that scoping exercise, which actually improves procedural fairness, I would say these are directly issues before the Commission.

And so, to that point of the PPE, why this public pretense that there is SMRs at Darlington if this is not what we're considering today?

THE PRESIDENT: I'll get OPG to comment and then -- then we'll comment as the Commission as well. OPG?

MR. MANLEY: Robin Manley, for the record.

I'm a bit baffled, honestly, by this comment. Because there is no public pretense whatsoever. We are very publicly on record as planning new nuclear activities at this site and we're very publicly on record that we are investigating small modular reactors and we have stated which technologies we are considering.

In our licence application we are applying

for renewal of the existing site preparation licence, which completely covers any of the SMR designs that we might be considering, all of which are smaller than -- than the large reactors that were considered back in the day. And when we come to a construction licence application we will present for Staff, Commission and public review, in our application and supporting documentation, all the necessary materials for a considered decision on a construction.

But that is not what we are talking about today. We are talking about site preparation, and we will stay within the bounds of the EA and the licence.

THE PRESIDENT: Thank you.

Frankly, I don't have anything else to add to what Mr. Manley has said. The matter in front of the Commission has a very narrow scope. What you're alluding to is what will come at the next stage, and what we are doing today is very consistent with the approval by the JRP, as well as the Federal Courts around the PPE approach. And when the reactor technology needs to be selected, and OPG has just confirmed that they will work within the constraint of the envelope, the bounding case.

So I will ask my colleagues if they have any additional questions? Dr. Lacroix, or Dr. Berube? A show of hands? If not, thank you very much, Ms. Blaise, for your intervention and your submission. It's greatly

appreciated. Thank you.

We will now move to the Municipality of Clarington for the next presentation, as outlined in CMDs 21-H4.21 and 21-H4.21.A and Mayor Adrian Foster is here with us to present this submission. Mayor Foster, the floor is yours.

CMD 21-H4.21/CMD 21-H4.21A

Oral presentation by the Municipality of Clarington

MR. FOSTER: Thank you, Madam President. I believe you've got the presentation and I would ask you to take it over.

So I am Adrian Foster, for the record, Mayor of the Municipality of Clarington. I am joined with Fire Chief, Gord Weir; and Manager of Special Projects, Faye Langmaid. Both of whom were involved in the Joint Review Panel in 2012. I believe you are aware of Clarington's endorsement of the peer review comments of the EIS from the previous license application, and that you have our endorsement of the renewal of the license through our report PDS-025-21.

I will skip some slides in the interest of time. So next slide, please. That is simply a very quick

outline.

Next slide, please. Clarington Council's main interest is in ensuring the safety of our citizens. We deal with files that other municipalities generally do not. For example, the regular blasting at St. Marys' Quarry, and of course the nuclear file. We know how nuclear power affects our community, the safety standards and procedures for the plant, and the many issues surrounding rad waste storage and stewardship.

Every municipality has special circumstances, these are some of ours.

DNGS has been in Clarington since the early 1980s and is a positive presence. OPG engages regularly with Clarington Council and with staff. We have a good working relationship OPG. The relationship enabled the collaborative process that we undertook for the peer review of the Environmental Impact Statement for last application and serves all parties well in dealing with nuclear file issues that are important to the Municipality, OPG and the CNSC.

OPG has built community confidence through years of liaison, outreach and excellent performance.

Next slide, please. Clarington was created in 1974 with the amalgamation of the townships of Clarke and Darlington; hence the name of the plant.

We are one of eight lower tier municipalities in Durham Region and are the eastern limit of the Greater Toronto Area.

We have four urban areas, Newcastle to the east, Orano to the north, Bowmanville and Courtice on either side of the New Build Location.

Our land base is 612 square kilometres. Our largest industry is agriculture. St. Mary's Cement, OPG and Lakeridge Health are our major employers.

Next slide.

And again, next slide, please.

So there is a legislative framework for land use.

Next slide, please.

And mostly, we would be looking at our official plan, which strives to concentrate the growth and development in the three urban areas, Courtice, Bowmanville and Newcastle, and to protect the agricultural and environmental lands surrounding the urban areas, villages and hamlets.

The major transportation corridors are the East-West 401 and 407 corridors, the north-south links, being Highways 418 and 35-115, then a regional grid of roads interconnected with these highways, and the local road network services, the urban and rural lands within the

municipality, including the New Build site.

Next slide, please.

DNGS and New Build are ideally sited between Courtice and Bowmanville, south of the 401 on the lake. Land uses surrounding the site are generally industrial, commercial and green space.

The 2012 Joint Review Panel made recommendations that addressed land use planning in and around nuclear generating stations regarding sensitive residential development and public facilities within a three-kilometre buffer. The recommendations resulted in changes to the Provincial Policy Statement in 2014 and, as a result, Clarington amended its Official Plan to address the appropriate setbacks for sensitive land uses.

There are 61 pre-existing residences within the three-kilometre zone, the closest school is 3.3 kilometres from site centre. There are no existing or planned sensitive land uses such as daycares, schools or senior homes within two kilometres.

And Ms. Langmaid will be happy to address this further on.

Next slide, please.

Again under legislative emergency

planning, the Municipality of Clarington is responsible to develop and implement emergency management programs under *The Emergency Plans Act*, *The Fire Prevention and Protection Act*, and *Ontario Fire Code*.

Our plan prescribes the organization and the response to be implemented. We work with the DEMO, Durham Emergency Management Office, and share a framework for emergency management, response strategies, operations, roles and responsibilities. The emergency plan is reviewed annually and updated. Nuclear emergencies are a provincial responsibility with command being from provincial office, in coordination with CNSC.

We have annual training sessions and annual practice exercises. In partnership with OPG, the Fire and Emergency Services cross-train Clarington and OPG staff in case of
a nuclear emergency.

The Time Estimate Evacuation Plans developed for OPG were last done in 2017 and are updated every five years, and are reviewed by Clarington staff.

Next slide, please.

Clarington's population is currently estimated at 105,000, with about 37,000 households.

We are one of the fastest-growing municipalities in the GTA and southern Ontario. One of the

planks of our economic development strategy is to attract jobs to Clarington to
ensure our commercial/industrial tax base grows to allow us to maintain the services we provide to residents. This will only be possible if we can achieve a higher jobs-to-population ratio.

Next slide, please.

We'll quickly go through these charts. They're self-explanatory.

So population projections.

Next, please.

Where we see the population going.

Next, please.

Employment projections.

Next, please.

And employment by sector.

Next slide.

And the next slide, please.

The Darlington Nuclear Generating Station has been a significant part of Clarington since the 1980s. It has provided positive benefits to our community, including economic growth, increased local biodiversity and additional outdoor recreational amenities.

We have experience with the effects of construction and operation of a

nuclear power plant. Both phases require -- have different requirements, but are manageable. We have been diligently preparing for New Build.

Clarington staff participate in the Durham Nuclear Health Committee, including regular updates from OPG staff and the Port Hope Area Initiative. Council and staff participate in the licensing hearings and participate with OPG on the various EAs where appropriate. Council has representatives on the Community Advisory Committee.

We participates in the Nuclear Waste Management Organization and our CAO is the secretary of the Canadian Association of Nuclear Host Communities. More importantly, the community knows what nuclear power generation is and is supportive.

OPG maintains a beneficial presence in the community and provides regular communications to residents. They have always been willing to listen and participate.

Next, please.

Our experience with you, the CNSC. You see a list.

As you're aware through your interactions with us, Clarington has had a great deal of interaction with the CNSC in hearings and submissions as noted above. You are not strangers to our community, and we are always welcome to the engagement.

Next, please.

There are key issues.

Clarington, Durham Region, OPG, the Ministry of Transportation and Metrolinx have collaborated on a number of road network improvements since 2010. We have seen completion of Highway 418 as well as redesigns and rebuilds of the 401 interchanges at Holt and Courtice Roads. The same stakeholders continue to be actively involved in the GO train extension to Bowmanville.

OPG and Clarington have a Host Municipality Agreement regarding the New Nuclear at Darlington Project. It addresses recreational features, traffic and road impacts, emergency preparedness and fire protection, municipal fees, provincial taxes -- property taxes, pardon me. I wish we had access to provincial taxes. Socio-economic considerations, and financial contributions to the MEOC.

The management of radioactive waste that would be created through the Darlington NND Project is being addressed by NWMO. Clarington is participating in NRCan's review of the RadWaste Policy Framework. We are comfortable with the Dry Used Fuel Storage Facility and anticipate that NWMO will be successful in implementing a DGR for the long-term management of used fuel.

Clarington is an active participant in CANHC and NWMO.

Next slide, please.

This speaks to it all.

We had, in the past, been very concerned with the visual impact of massive cooling towers. SMRs do not pose such a problem.

Next slide.

And the next slide.

So public support. This speaks for itself.

OPG is actively engaged. The community is aware of and comfortable with nuclear, and we have benefited from OPG.

And last slide, please.

So nuclear and new nuclear is a significant part of our economic development strategy. The cluster development to the west and adjacent to the Darlington Nuclear Plant in the Clarington Energy Business Park is a major focus that OPG is an integral part of. Clarington is proud to be a nuclear community and we will be proud to play a role in the future of the nuclear industry.

And my apologies for going a little over, and my apologies to the translators.

THE PRESIDENT: Thank you very much, Mayor Foster, for your submission.

And I'll turn the floor to Dr. Berube for any questions.

MEMBER BERUBE: Yes. Thank you very much, Mayor Foster, for your presentation. I'm particularly appreciative of the data and the maps and some of the graphics that give us a better context of your municipality and the resources available there.

As part of your presentation, I think it's a good time to talk to OPG about their intended build underneath this particular licensing in terms of what buildings they intend to put on the site, how much material they intend to move in terms of grading the site, what the logistics look like for the community in terms of how much throughput they anticipate that to be or if they actually modeled that.

OPG, if you could speak to some of this, give us a broader definition of what you intend to do within this licensing hearing and in this licence context.

MR. MANLEY: Robin Manley, for the record. Thank you for the question, Commissioner.

I'm going to ask Carol Gregoris, who's our project director, to provide some details around the site preparation phase itself and the kind of activities that we

imagine to conduct there and sort of -- I think you're talking about an amount of land that would be changed.

And we also have Alain Levesque representing the Darlington site who can speak a little bit about the traffic and transportation aspects if that would be helpful.

So maybe I start with Carol Gregoris, please.

MS. GREGORIS: Carol Gregoris, for the record.

So as part of our site preparation activities, we're really looking at two phases.

So the first phase would be the items that we can get started on right away, so we're looking at bringing services over, rerouting some drainage lines that go through the property, bringing in some internet, emergency communications systems onto the property.

So roads and -- and that's pretty much it. Parking lots, maybe.

The second phase would be the more substantial phase of site preparation. There we would be looking at building buildings and doing more grading activities.

So we're still in very early planning right now. I can't give you exact footprints or soil

quantities that will be moved.

What I can say is, based on the plans in 2012, what we're looking at is much smaller than those plans.

Thank you.

MR. MANLEY: Thanks. Thanks, Carol.

And Alain, could you talk a little bit about the capacity of the site with respect to traffic and transportation?

MR. LEVESQUE: Good afternoon. For the record, my name is Alain Levesque. I'm the Senior Manager, Facilities and Projects, at the Darlington site.

OPG continues to interface with the MTO, Municipality of Clarington and Region of Durham, to ensure that road improvements in the vicinity of the Darlington nuclear site are congruent with OPG's project plan.

OPG has a committed -- has committed to a traffic management plan for the site preparation and construction phase of the project, and this plan will be the means through which traffic impacts will be monitored and effective mitigation techniques incorporated into the construction program.

MEMBER BERUBE: I just have a few more questions in this particular area.

Part of building buildings, whether

they're temporary or permanent, requires certain amounts of services, fire water being one of them, I would think municipal water being another, sewer being another, all of which fall underneath the domain of, of course, the municipality and your connection to the municipality.

Have you actually looked at this to see what your capacity needs would be underneath this licence and whether or not that's been arranged through the municipality at this point?

MS. GREGORIS: Carol Gregoris, for the record.

So as part of our planning, we're looking at that now. We are starting to have those discussions with the municipality, but based on our original plans, we did bring some services closer to the area a few years ago as part of another project. We don't think it will be an issue, but all that has to be verified in future planning.

MEMBER BERUBE: And my final question is for Mayor Foster.

Do you foresee any issues here with zoning or perimetry with anything that's underneath that provision of this licence for OPG going forward -- this licence at this point?

MAYOR FOSTER: I don't. I will pass that along to Ms. Langmaid, who is -- as I've noted earlier, she

is with our planning department, but I don't -- Ms. Langmaid, correct me if I'm wrong.

MS. LANGMAID: Faye Langmaid, for the record.

No, the Mayor is absolutely correct. This has a utility designation on it, and it can do what it needs to do under that designation from a zoning point of view.

MEMBER BERUBE: Just one last question for the municipality.

Of course, OPG has its own fire service, but you have to do back-up in the event that something happens or maybe, in this case -- I'm not sure how this is going to be handled because it's new administrative build.

Do you have the fire resources to actually handle any new buildings on that particular facility if you had to?

MAYOR FOSTER: Adrian Foster. for the record.

And I will pass that over to our fire chief, Gord Weir. I anticipate his answer is going to be yes, but again, I will leave to the Chief.

Chief Weir?

Perhaps Chief Weir is not with us.

The dialogue on New Build and the

substantially larger New Build has been going on for quite some time and has not been a major point of concern for us.

MEMBER BERUBE: Darlington, I guess you've got a plan to actually deal with that yourself if you had to.

I have no further questions. Thank you.

THE PRESIDENT: Thank you, Dr. Berube.

Adrian Foster, may just to follow up on this line of questions, your presentation's very positive that, you know, whatever issues there are you've been working through them, the relationship is good, you're very hopeful and optimistic.

Are there any risks or concerns from your perspective? Do you hear concerns from the public, for instance?

MAYOR FOSTER: Adrian Foster, for the record.

We do hear concerns from time to time from the public, but I think because of the very long engagement of the municipality -- so this goes back to Darlington Nuclear. You may be aware that we were the Canadian submission for ITER, so that was front and centre and, again, with the public. And then Darlington Nuclear New Build, the proposal for the larger reactors, the response when those was cancelled was, I would suggest, one of

frustration.

We, of course, have the refurbishment that is going on now, the dry fuel storage. There's been a lot of engagement, so generally speaking, the community is, I'm going to suggest, excited and is supportive.

Quite frankly, some of the concerns, we've heard of OPG coming to town, economic development can be a double-edged sword. We have seen price houses in Clarington rise significantly in the last little while.

As a homeowner, I am delighted. My two children, who would like to buy houses, are not as delighted.

So there will, of course, be challenges. But as we had noted earlier, the difference between construction and running a site even now with refurbishment, we have a significant number of people coming into town on that project. That is a major project, and it is being managed well by OPG.

THE PRESIDENT: Thank you very much for that.

Dr. Lacroix.

MEMBER LACROIX: Thank you very much, Mayor Foster, for your presentation and your submission.

I've got two questions. The first one is for staff. This is a question of procedure.

I've heard OPG that they said that their site preparation project is in two phases, and in Phase 2 they will construct buildings. And if I recall correctly, this morning I heard that in the reviewing of the licence application staff ignored the SCA fitness for service because there are no structures on site.

So did I hear correctly? And if -- well, I'll wait for your answer on this matter.

DR. DUCROS: Caroline Ducros, for the record.

Yeah. In relation to Regulatory Document 1.1.1 for site evaluation and site preparation, fitness for service is not applicable for a licence to prepare a site. It doesn't relate to just structures on site, and so I'll pass it to the project officer, Mrs. Laura Andrews, to explain how fitness for service -- what it relates to.

MEMBER LACROIX: Okay.

THE PRESIDENT: Is Ms. Andrews here?

DR. DUCROS: Well, in the absence of -- I will see, but otherwise, fitness for service applies to nuclear installations, not just buildings that are required as part of the site prep.

I believe OPG would also like to comment on this.

MR. MANLEY: Robin Manley, for the record.

If I could just clarify when we were just now speaking about site preparation with respect to buildings, these are not nuclear buildings, so this is not the reactor building, the turbine hall, the waste storage facility or any building that would be covered under a construction licence.

I'm talking about it might be a warehouse, it might be an administration building, some sort of a maintenance shop or a regular non-nuclear industrial.

MEMBER LACROIX: Okay. Thank you. I got it.

And my second question is for OPG. I've noticed in the submission from Mayor Foster that OPG h as committed to provide CNSC with a licence to construct plan document by the end of June.

Could you tell us more about this plan? Can you reveal some details?

MR. MANLEY: Robin Manley, for the record. Thank you for the question.

Yes, as a -- I would say at least a best operating practice, whether or not a regulatory requirement or not, it makes sense for a would-be licensee to be advising the CNSC Staff, "Here is what we are proposing to do. We are proposing to submit to you our licence application on, you know, such and so a date", more or

less --

MEMBER LACROIX: Okay.

MR. MANLEY: -- and that it would include the following materials. Maybe there's going to -- maybe the complete application package might come in different packages.

This is, I think, a not-uncommon. I don't know that it's necessarily common or uncommon, but it's certainly a past practice that you make various submissions to the CNSC Staff. For example, maybe we cover fitness for duty -- sorry, fitness for service and technical topics in one package and maybe we cover human performance and radiation protection and conventional safety in another package, for example.

And we would essentially lay out the proposed timeline and we would submit this to the CNSC Staff and they can, if they choose to, give us feedback and say, "You're missing something" or whatever they want to say.

MEMBER LACROIX: Okay, that's great. Thank you very much.

THE PRESIDENT: Okay. Thank you.

Thank you, Mayor Foster, for your intervention today. It was much appreciated. Thank you.

We will now take a break and resume the

hearing at 3:15 p.m.

Thank you.

--- Upon recessing at 2:59 p.m. /
Suspension à 14 h 59
--- Upon resuming at 3:15 p.m. /
Reprise à 15 h 15

THE PRESIDENT: Welcome back, everyone. We are ready to resume our submissions.

The next one is from the Organization of Canadian Nuclear Industries, as outlined in CMD 21-H4.15.

Dr. Ron Oberth is here with us to make the submission.

Dr. Oberth, the floor is yours.

CMD 21-H4.15
Oral presentation by
Organization of Canadian Nuclear Industries

DR. OBERTH: Thank you, President Velshi. Once again I'm honoured and privileged to be appearing before this Commission today.

Since I presented yesterday on another topic, you know who I am and you know who my organization

is, so I will spare a little bit of time and get right to it.

I won't repeat what is in my written submission, but I just want to underscore the importance of what the Commission heard just moments ago from the Mayor of Clarington. We are the community that would be most directly impacted by this project, express strong confidence in the way OPG operates as a neighbour, as a transparent world-class nuclear organization.

So I can only underscore the relevancy of that discussion and also point out that what OPG is doing demonstrates OPG's strong commitments to mitigating climate change. By moving forward now on this Site Licence Application, they will save time and ensure that if other licence applications such as the construction licence is granted, they can move forward in an expeditious manner to deploy new nuclear at the Darlington site.

That is essential if Canada is going to meet its net-zero by 2050 carbon goals. And OPG has actually recently announced its own climate plan, which includes the introduction of new nuclear at Darlington to reduce the amount of greenhouse gases that would be emitted otherwise.

And finally I just want to also underscore the confidence of my organization and others that OPG has

reviewed any gaps or any changes that might have occurred between the present time and 2011 when the last Site Preparation Licence hearing was held. They have reviewed that against REGDOC-1.1.1, have done a very vigorous undertaking, in my view.

I have full confidence that the granting of this Site Preparation Licence is in the best interests of the people of Clarington, the people of Ontario and also the people of Canada in moving forward on a program that is important to all of us and especially those of us who have children and grandchildren who are going to be inheriting this planet from us.

That's all I really want to say, is that OCNI fully supports this application. I know that my members that support OPG and work for OPG are also very confident that OPG's attention to rigorous community and Indigenous engagements is second to none and that they have demonstrated, in my view, the integrity of an organization that deserves to have this Site Licence Application approved.

THE PRESIDENT: Thank you very much, Dr. Oberth.

Let me turn to Dr. Lacroix for any questions he may have.

MEMBER LACROIX: Thank you very much, Dr.

Oberth, for your presentation; a very short presentation but to the point.

I have no further questions. Thank you.

THE PRESIDENT: Dr. Berube?

MEMBER BERUBE: Again thank you very much, Dr. Oberth, for your presentation. And I too have no questions.

THE PRESIDENT: Dr. Oberth, your presentation is a good segue for me to ask my question, maybe first to OPG and then to CNSC staff.

Again I know we're not talking about technology and selection, but we talked about SMRs.

My question is: OPG, in your vision, in your clean energy plan, what is contemplated for this site?

The reason I ask this question is in the event the Site Prep Licence does get renewed for ten years, is there a likelihood that down the road after say your first unit is in operation that you would think of building a second one or a third one? And does the Site Prep Licence then have to get renewed again? I just wondered how that would play out.

Can you share what your thinking is at the moment, please?

MR. MANLEY: Robin Manley, for the record. And thank you for that question.

To be clear, at the moment we are in the process of evaluating the right technology partner that brings the right opportunity for the site, the region, Ontario and, thinking even more broadly, the country.

So we are imagining to be a first mover to deploy this first SMR project of around 300 megawatts in size, but we are mindful of the fact that the province will need more non-GHG emitting power over the decades to come.

So we have not decided that there would be a second or a third or a fourth. That is something that would have to be, you know, discussed internally and with our board and with the shareholder and of course the municipality and the region as to what works for them as well.

The Environmental Assessment allowed for 4,800 megawatts of electric. At this time we are not imagining building that much capacity at that site. That would require some very large reactors, which is not what we are currently looking at. But we have not precluded the potential that that could happen down the road and we are not saying that there would only be one plant. There might be more than one plant, and that's down the road from where we are today.

So the site preparation planning activities that we are doing right now are for one but

keeping the option open, not precluding the option to build more down the road.

So the Site Preparation Licence application that we are requesting for ten years, we imagine, we believe that as long as we fall within the licence conditions and the EA conditions, which encompass 4,800 megawatts, we believe that we would not need to come back for a new Site Preparation Licence or a renewal of the Site Preparation Licence as long as we meet all of the requirements of the licence, all the commitments that we have undertaken and that we stay within the scope that was evaluated.

Obviously we need to provide our plans to staff for them to review and to validate, and if they have challenges and questions obviously they will pick them up appropriately.

Does that answer your question?

THE PRESIDENT: Yes, it does. Again just to confirm, though, that there is a potential, premature now but there is a potential that ten years from now you could come back for another renewal of the Site Prep Licence.

MR. MANLEY: Robin Manley, for the record.

I guess that is a potential, yes, or potentially -- again very premature to really discuss, but

potentially we could start site preparation on a second or a third plant within the existing ten-year window.

THE PRESIDENT: The ten-year window would be the constraint and of course the -- got it. Okay, thank you.

Dr. Oberth, thank you very much for appearing in front of us today.

Our next presentation is from the CANDU Owners' Group Inc., as outlined in CMD 21-H4.20.

Ms. Stephanie Smith is here with us to present the submission.

Ms. Smith, over to you, please.

CMD 21-H4.20

Oral presentation by CANDU Owners' Group Inc.

MS. SMITH: Good afternoon. For the record, my name is Stephanie Smith and I am the President and CEO of the CANDU Owners' Group, or COG, as we like to call it.

Thank you for giving the COG the opportunity to present our thoughts on OPG's request for a ten-year licence renewal.

First I would like to provide a brief overview of COG.

We are a private, non-for-profit company founded in 1984 that was funded voluntarily by CANDU operating utilities worldwide, the Canadian Nuclear Laboratories and supplier and program participants.

COG is a trusted nuclear industry leader comprised of highly skilled teams with extensive experience in many facets of CANDU nuclear technology. Together with our members, suppliers and research and partner organizations, COG is continually innovating nuclear plant equipment and processes with a focus on driving excellence through collaboration.

COG members spend approximately $70 million a year in research and development and joint projects to strengthen the safety, reliability, environmental and cost performance of CANDU nuclear plants.

To put this amount in context, it is in line with the spending of the top 15 or so private research investors in Canada. This work not only helps develop better nuclear plants but also fosters collaboration that progresses Canada's innovation agenda and creates an opportunity for advancement in all other areas, including new nuclear technology like small modular reactors, or SMRs.

This brings us to the focus for today.

COG shares the vision from OPG of an SMR

on the Darlington site. We see great benefit to Ontarians while positioning Canada as a global clean energy leader and enabling Canada's ongoing plan to achieve net-zero carbon emissions by 2050.

The development of new nuclear projects will contribute significantly to Ontario's sustainability and prosperity through the creation of well-paying jobs and associated economic benefits, the potential to strengthen the supply of medical isotopes worldwide and the versatile use of new nuclear in many industrial applications.

Starting with the Darlington site it is expected that additional grid size SMRs could be subsequently deployed by collaborating with partners building on the expertise gained by Ontario Power Generation.

To this end COG's SMR program is contributing to Canadian collaboration to advance SMR technology and strengthen industry alignment on employment strategies.

COG's efforts are aligned to the Government of Canada and the Canadian nuclear energy's shared vision to leverage SMR technologies to provide non carbon emitting energy for a wide range of applications, from grid scale electrical generation to use in heavy industry and remote communities.

COG's integrated and collaborative approach brings advantages by delisting delinking risks for all of its partners.

COG has also launched collaborative initiatives in the area of mutual interest to its members under the CEO SMR Forum, SMR Vendor Participant Program and the SMR Technology Forum. In addition, COG works with the Canadian Nuclear Association in managing the industry's SMR Secretariat.

Canada's nuclear industry will be soon celebrating 50 years of safe, clean and reliable service to the people of Ontario. Throughout that time OPG has proven itself as an exemplary operator of its present fleet of reactors and a great neighbour in the communities where it operates.

The company has demonstrated its respect for the Indigenous communities and for the culture and next generation of Ontarians, Canadians and other stakeholders who have shared interests through their commitment to environmental study and stewardship.

To conclude, the collective efforts and commitment of COG participants and its members are contributing to the successful development of new nuclear technology in Canada. OPG is a leader in these efforts and we support that the site licence should be renewed.

Thank you.

THE PRESIDENT: Thank you very much, Ms. Smith.

Dr. Berube, any questions?

MEMBER BERUBE: Yes. Thank you very much, Ms. Smith, for your presentation.

This is related but it's not specifically to do with the licence but just as we have you here as an expert.

Where do you think nuclear technology is going from here?

I mean, we've spent a lot of time in Canada for the last 50 years on CANDU systems and we're moving forward now. There's a lot of talk right now about SMRs but since we have you in the room it gives us some anticipation of what we need to plan for.

Where do you think that technology is evolving to at this point?

MS. SMITH: Stephanie Smith, for the record. Thank you for the question.

In this role that I have now I do have a lot of interface with international organizations and with the development of new technologies. Particularly the small modular reactors are very much of an interest to the worldwide economy.

Particularly SMRs are being investigated for African countries because of their portability. So there is great interest in the international community around the development of these small modular reactors.

MEMBER BERUBE: Thank you. No more questions.

THE PRESIDENT: Thank you.

Dr. Lacroix?

MEMBER LACROIX: Thank you, Ms. Smith, for your presentation.

Let us re-center the question to the present licence application.

I was wondering: Will COG be involved in the preparation of the site itself?

MS. SMITH: Stephanie Smith, for the record. Thank you for the question.

No, we will not be directly involved with the preparation, anything to do with the site. COG is much more into collaborating and bringing the larger issues that could affect not only OPG but our other members as well.

So we are working on things such as heat production, radioisotopes, desalination, those types of issues. But we are not right down into the…

MEMBER LACROIX: Okay. To follow up on the subject brought up by Dr. Berube, is the nuclear

industry going digital?

MS. SMITH: I would say, knowing the way the rest of the world is going digital, that we as a nuclear industry need to do that and we need to keep up with the technology.

So yes, I agree that that is an important thing that we as owners of the utilities need to do.

MEMBER LACROIX: Okay, thank you.

THE PRESIDENT: Ms. Smith, can you tell us a little bit about these different fora and working groups that you have spoken about, particularly the Canadian ones? OPG in its presentation, and some of the intervenors, have also made the statement that OPG is kind of on the vanguard. It is kind of best positioned to take a leadership role for the Canadian industry when it comes to SMRs.

I wondered how, take the CEO SMR Forum, the role COG has in ensuring. I mean, is this what's being proposed for the Darlington site, almost a demonstration to check the viability of SMR deployment?

Help us understand where this particular project fits in the overall pan-Canadian picture.

MS. SMITH: Okay, thank you for the question.

Once again, my name is Stephanie Smith.

I spoke a little bit about COG's collaboration model. Really what we do is we're bringing people together to talk about common interests.

So yes, Darlington is -- I would say they are quite a bit ahead of where some of the other utilities are, but there are common issues among all, anybody that's going to be building a new small modular reactor, any new nuclear development.

We are bringing the people together to talk at a very high level. So OPG is part of that but we also have New Brunswick Power is part of that. And Canada, NRCan has presented a roadmap that lists various streams. So we are supporting through some of these forums, looking at common issues that are common to all three of those streams that are laid out in NRCan's proposal.

THE PRESIDENT: Okay, thank you.

Thank you very much for your submission today, Ms. Smith.

MS. SMITH: Thank you.

THE PRESIDENT: We will move to our next intervention, which is from Dr. Jerry Cuttler, as outlined in CMDs 21-H4.22, 21-H4-22A and 21-H4.22B.

Dr. Cuttler over to you, please.

CMD 21-H4.22/21-H4.22A/21-H4.22B

Oral Presentation by Jerry Cuttler

DR. CUTTLER: Good afternoon.

For the record, I'm Jerry Cuttler and welcome to my presentation. My submission is in two parts.

Part A is about renewable of the site licence and the need to change Canadian laws and regulations that control nuclear energy.

Part B presents the evidence on beneficial health effects of radiation, which relates to nuclear safety, social acceptance and the affordability of nuclear energy.

Next slide.

I discussed my review of the documents and I pointed out the importance of nuclear energy and discuss the barriers that make nuclear energy unaffordable. I urged Canada to re-examine the evidence and the facts and inform Canadians about them and arrange to change our laws and regulations.

Next slide, three.

In my conclusions I endorsed the CNSC staff recommendation to renew OPG site licence. I state the important benefits also and the negligible risks of nuclear energy.

Next slide, slide four.

A false radiation scare was broadcast in 1960 and it blocks important medical treatments and drives up the cost of nuclear energy, making it more and more unaffordable.

The health effects of radiation are well-known, they contradict the linear no-threshold model. There are known thresholds for dose and dose rates. Our laws and regulations need to change. The radiation scare needs to stop for better health care and for recovery of nuclear energy.

In Part B, I present health effects. We have 125 years of information on important medical treatments. But the US created a radiation scare in 1956 and in 1960 the radiation protection folks recommended a precautionary principle and ALARA. It was accepted by everyone without review.

We should use the biphasic model instead of the linear no-threshold model. The known thresholds define the low-dose range.

There is US Department of Energy evidence on the ecological impacts of radiation for all the different classes of life. Those thresholds have been known for about 40 years. This is in a paper report by Whicker, F.W. and Schultz, V. (1982) *Radioecology Nuclear*

Energy and the Environment. It's an IEA website document.

This OECD NEA 1995 evidence, this is evidence of a 3 Gy mortality threshold dose for the Chernobyl workers who were hospitalized with acute radiation syndrome.

There is 30 years of follow-up information on 106 heavily irradiated workers who recovered from the acute radiation syndrome, and this evidence was provided by Dr. Angelika Barabanova in 2016.

This shows the leukemia data, eight years, from 1950 to 1957, end of 1957. This is Hiroshima atomic bomb survivors. And you can see there's a clear threshold of 1.1 Gy for onset of increased leukemia. Below that there's lower incidence.

This is an analysis of a dog study that gave a gamma radiation dose to dogs for a life span, their entire life, life-long. And you can see there's a clear threshold of 700 mGy/year. And the interesting part is the dogs that are short-lived have a higher -- it appears a higher beneficial effect in the low-dose range, and above the threshold it's worse. So short-lived sensitive dogs benefit more in the low-dose range.

The next slide is an analysis of another dog study. This gave a threshold for inhalation of plutonium aerosol. Again, this time we have data in the

low-dose range, and you can see significant beneficial effects for small amounts of plutonium aerosol in lungs, longer lifespan. Whereas when you exceed the threshold for the burden of plutonium in lungs, the lifespan decreases, usually from lung cancer.

The next slide, this analysis gave the statistical spread of the 700 mGy/year gamma dose rate threshold that was determined earlier.

There was a question about statistical accuracy, so another analysis was done and here you can see the threshold is between .5 to 1.1 Gy/year continuous threshold, continuous exposure.

Now, this is the first year annual exposures due to the release of radioactive material from the three damaged Fukushima reactors. And the highest level, which is Place "a" is lower than the threshold, in fact it's lower than the cumulative dose for a year in Ramsar, Iran. So this shows that there was no justification, it did not warrant the evacuation of the residents around Fukushima.

Fear of any radiation deters treatments that would remediate important diseases, including Alzheimer's disease.

On May 30th, 2021, that's just a month ago, that's two weeks ago, the CTV National News

broadcasted a story on the successful completion of a small clinical trial, which I led and I initiated, on Alzheimer's disease. It was done in Toronto at Baycrest & Sunnybrook Hospitals. This study treated four patients, three CT scans, but it took me four years to carryout the study because it was so controversial.

The fear of radiation is blocking many treatments, treatments for cancer, infections, pneumonia, including COVID-19, lung inflammation, inflammatory diseases, rheumatoid arthritis, autoimmune diseases for which there's generally no cures, and other immune disorders, and also the recent work I've done with Alzheimer's.

And there's other neurodegenerative diseases that can be treated with low doses of radiation, including Parkinson's and glaucoma which is an eye disease in seniors.

So my whole message is we've got to get the communication going, we've got to look at the evidence that's been here for 60 years. First, we have to communicate the evidence that people have disregarded for this time. We have to look at it, convince ourselves that it's valid, and then communicate to Canadians, and then we have a basis for changing regulations to what they should be.

And this will allow medical treatments and nuclear energy to progress. It was easy to build Pickering A, but it's very difficult to build reactors today, and it's all because of the increasing fear of radiation.

Thank you, that's my presentation. Now we can go onto discussion.

THE PRESIDENT: Thank you very much for your presentation and your submission, Dr. Cuttler.

You know, the early part of your submission where you talk about this particular licence renewal application, Staff's assessment and your endorsement and support of what Staff is recommending is very reassuring.

Your second part, while very interesting, is really outside the scope of what's in front of us today. But I will ask my colleagues if they have any comments or questions to make on this.

So let's start with Dr. Berube first please.

MEMBER BERUBE: Well, thank you, Dr. Cuttler, for a fascinating presentation. I have no questions.

THE PRESIDENT: Dr. Lacroix.

MEMBER LACROIX: Thank you very much, Dr. Cuttler, for your presentation. Yes, I will reiterate it's

a fascinating submission, I found it very interesting.

And the linear non-threshold hypothesis is hotly debated in the community. I would refer you to the REGDOC-2.7.1 that this Commission has examined two days ago, and especially Section 4.1, which is devoted to the application of ALARA. I too have many questions concerning this offspring of the linear non-threshold hypothesis.

But I must say that Section 4.1 of this REGDOC is quite interesting in the sense that there's a good discussion on the social and economic aspects of this hypothesis. So I think that you will find some interesting comments in this document.

Thank you very much.

DR. CUTTLER: Thank you. I just want to add that the reason we have these public hearings is because of the controversy surrounding any nuclear projects and, therefore, what I've presented is relevant not only for this hearing but for all hearings on nuclear energy. Because inevitably there's concerns about health risks, and basically the evidence is showing that there's benefits, the risks are really not there.

Because when you look at credible accidents the releases are far too low, factor of 10, and in most cases low. And we also analyze scenarios that are totally unreal, and we do this because of historical

reasons.

But we really need to look and decide whether these scenarios we are analyzing in our safety analyses are credible, whether they can really happen. And the credible ones do not produce releases, they're in the beneficial range.

So the whole concern about nuclear risks goes away and should go away. The problem is it's important to communicate this information to Canadians before we can change anything.

And so it's the role of Canadian Government, whoever it is that's going to do it, to look at this evidence and then communicate it to Canadians before we can restore nuclear energy to its rightful place. We keep talking about the crisis we have and it's important to remove the fears that will prevent a good solution, including the waste.

The waste we manage very nicely and there's no basis for concerns about risk. Likewise, proliferation is not a credible, as I explained in my report, is not a credible idea and yet we're forced to keep looking at it and implementing measures that are not credible.

We shouldn't be doing it, it's creating more fear. Everything we're doing is creating more fear.

We have to change what we're doing if we're going to have a future for nuclear energy. We have to change what we're doing.

Thank you.

THE PRESIDENT: Thank you.

MEMBER LACROIX: Could I add something?

THE PRESIDENT: I've got Mr. Manley and then to you, Dr. Lacroix. Mr. Manley.

MR. MANLEY: Thank you very much for the opportunity to comment. It's Robin Manley, for the record.

I wanted to say that I appreciate Dr. Cuttler's submission and presentation for bringing science and facts in front of the Commission and the public watching today in order to have, you know, a balanced discussion about risks of nuclear power and radiation and a balanced perspective against some of the other thoughts that have been expressed earlier.

And briefly, just to say that I've worked in radiation protection professionally for 20 years and yet Dr. Cuttler was able to bring some facts that I did not know, and so I appreciate that opportunity.

Finally, just to say that in his submission he refers to the graded approach in the licensing process and the complex comprehensive and thorough application and materials that OPG submitted and

that we were happy to do and we believe that we meet the regulatory requirements.

But just to say that not all small modular reactors will be of the same size and same scope and so, you know, we're hopeful that as future licence applications come forward in front of the Commission that there will be opportunities for the graded approach to be applied looking at risk, such as Dr. Cuttler has pointed out and that that will, you know, balance risks and benefits and make sure that the public and the environment are always protected, but doing so in a way that takes account of the science.

Thank you.

THE PRESIDENT: Mr. Manley, I thank you for your statement. But, frankly, I think you've worked with the CNSC long enough to know that that's exactly the way the CNSC works, with a graded approach and risk informed decision making.

I think, Dr. Cuttler, we just have to find the appropriate forum for you to come and bring this forward when there can be discussion, where there can be debate. You know, Dr. Lacroix talked about our regulatory documents that were in front of us just a couple of days ago, it would have been wonderful to have gotten your perspective as REGDOCs were going through a public discussion and comment time.

But there will be other opportunities and I'd ask Staff to look out for those so that we can actually get into this and are we over-regulating and, in the process, creating unnecessary fear because we kind of leave the impression that things are dangerous whey they may not be.

DR. CUTTLER: I will respond favourably to your invitations.

THE PRESIDENT: Thank you, I appreciate that. Thank you.

Dr. Lacroix.

MEMBER LACROIX: I just wanted to point out that 200 years ago we had the same discussion and the same fear about the steam engine, and 100 years ago we had the same discussion and the same fear about this new energy form that we call electricity. Today, it's nuclear power. And 100 years from now, well, it's up to you to think about it.

Thank you.

THE PRESIDENT: Thank you very much. And, Dr. Cuttler, thank you very much for your submission today.

DR. CUTTLER: Thank you.

THE PRESIDENT: Let's move on then to our next presentation which is from the Power Workers' Union as outlined in CMD 21-H4.29.

We've got Mr. Jeff Parnell who will be making the presentation or at least starting the presentation.

So, Mr. Parnell, please proceed.

CMD 21-H4.29

Oral presentation by Power Workers' Union

MR. PARNELL: Thank you. Good afternoon, my name is Jeff Parnell, I am the President of the Power Workers' Union.

With me today is Martin Waggett. Martin is a Darlington representative on our Executive Board. Mr. Waggett is an Authorized Nuclear Operator and has worked with Ontario Power Generation for 29 years.

The Power Workers' Union represents 18,000 members in the electricity sector, including over 6,000 members working at the Bruce, Pickering and Darlington Nuclear Generating Stations.

Our members have been responsible for the safe operation of Ontario's nuclear reactors since 1966 when Douglas Point Generating Station was first commissioned.

PWU members also provide security, radiation safety and maintenance to ensure these plants

operate safely. I think it is extremely important that we, as a union representing the men and women who operate these plants, take part in these proceedings.

The real world experience of our members and the members of the other unions involved in the operation, maintenance and construction of nuclear facilities is vital to decisions made in this hearing.

But PWU is committed to following principles: creating opportunities for sustainable high pay; high-skilled jobs; ensuring reliable, affordable and environmentally responsible electricity; build economic growth for Ontario communities; and, promote intelligent reform of Ontario's energy policy.

We believe that nuclear power has an important role in Ontario to fully support the CNSC recommendation, that the site preparation licence at Darlington be extended. The PWU supports the assessment and the conclusions reached in the CNSC Staff report, CMD 24-H4. The PWU believes that the CNSC Staff considered the appropriate information and reached the appropriate conclusions.

Specifically, in 2012 an environmental assessment was completed by a Joint Review Panel under the Canadian Environmental Assessment Agency. The Joint Review Panel determined that the proposed project is not likely to

cause significant adverse environmental effects.

CNSC Staff determined that the scope of the renewal application is within the bounds of the approved Environmental Assessment.

CNSC Staff stated OPG's performance in all applicable safety and control areas at the Darlington New Nuclear Plant as satisfactory. CNSC Staff concluded that the Darlington New Nuclear Plant site remains suitable.

CNSC Staff confirmed that the existing licensing basis for Darlington New Nuclear Plant remains valid. CNSC Staff concluded that OPG is qualified to carryout the activities authorized by the site preparation licence, and in carrying out those activities will make adequate provisions for the protection of the environment, the health and safety of the persons, and the maintenance of our national security.

CNSC Staff recommended renewing the site preparation licence with amendments for the period of 10 years, valid to August 17th, 2031.

In 2009 representatives from the PWU sat before the Commission and endorsed OPG's request for a site preparation licence. At that time we explained that OPG's history of operation of nuclear facilities and their commitment to health and safety made them the obvious choice to go and operate a nuclear generating station.

Our written submission to the Commission regarding the extension outlines how that commitment has not changed, in fact it is strengthened. OPG has a strong record of safe operations at the Darlington Nuclear Plant with world class operating performance. Darlington regulatory meets or exceeds regulatory requirements for all SEAs.

Darlington has mature successful programs for radiation protection, conventional health and safety, environmental performance, emergency management and fire protection, waste management, security safeguards and nuclear non-proliferation, packing and transport.

Darling has been recognized by the World Association of Nuclear Operators and their industry peers for excellence in performance. You can be confident that OPG's demonstrated commitment to satisfy at the current Darlington facility will continue with the Darlington New Nuclear Project.

The health and safety of PWU members on the job has been the one issue above all others that has dominated the PWU's focus throughout its history, due in part to the strong collaboration between the PWU and OPG. OPG has seen exceptional health and safety records and a robust safety culture at all nuclear facilities.

The PWU raises the following examples of

continuing measures having a positive impact: Joint Health and Safety Committees; Joint Policy Committee on Health and Safety; Joint Health and Safety Working Committee; Joint Committee on Radiation Protection; PWU Health and Safety Committee.

These measures are currently in place and will be applicable to the Darlington New Nuclear Project through all phases of the project.

In labour relations the PWU and OPG have an effective and mature relationship. Through regular meetings issues are addressed and resolved at all levels, from the shop floor to the executive offices.

Mr. Waggett and the other on-site union leaders meet informally and formally with OPG's on-site management team to address and resolve local issues. And the VP, Andy Clunis, meets both formally and informally with the OPG Chief Nuclear Officer and OPG Senior Leadership. I have regular meetings and conversations with the OPG President and Vice-Presidents to discuss ongoing issues and initiatives.

As the Darlington New Nuclear Project progresses, it will be part of the relationship between the PWU and OPG discussed above. Technology and choices for the Darlington New Nuclear Project are outside the scope of the OPG's application to renew the site preparation

licence. But the PWU does suggest that early engagement between OPG and the PWU in the technology selection process is mutually beneficial and we encourage and require the ongoing dialogue at all levels.

In conclusion, I want to highlight the following points. The Darlington Nuclear Plant has been providing clean, reliable electricity for Ontario for 30 years along with many social and economic benefits to the local community and the province. New Nuclear will continue to provide these benefits.

As evidenced by the number of submissions received by the Commission for this hearing, the strong support for Darlington in the local community and across the province has been continuous since its construction.

OPG has a solid history of safety operating nuclear facilities and nuclear projects, including Darlington Nuclear Plant operations and Darlington Refurbishment. There is no reason to believe this will not continue through the life of the New Nuclear Project and the project will benefit from OPG's expertise.

There is a strong history of collaboration between the OPG and the PWU, especially on matters related to the health and safety of people and protection of the environment. OPG has demonstrated that a refurbishment project on a Darlington unit can be successfully completed

while safely operating the remaining units. Operating at Darlington's current facilities will not have an adverse effect on site preparations for New Nuclear.

There is a valid environmental assessment and a site preparation licence for the Darlington site, and the scope of the project has not changed from the original application made in 2009, all of which is respectfully submitted.

Thank you.

THE PRESIDENT: Great. Thank you very much, Mr. Parnell.

Let me start with Dr. Lacroix.

MEMBER LACROIX: Thank you very much, Mr. Parnell for your presentation. No, I have no questions.

THE PRESIDENT: Thank you. Dr. Berube?

MEMBER BERUBE: Thank you for your presentation.

Since we have some of the people that actually operate the reactors with us from Darlington at this point, and do rad protection, I think it's a good time to ask a couple of questions about the actual -- the licence land area itself, in terms of what kind of radiological monitoring do you have there.

Do you have wells that you monitor on a regular basis? And part of that -- part of this mentions

something about stormwater management, which would imply to me that you're -- you're looking at either putting in ditches or piping networks and stuff like this. But of course, being close to the proximity of an NPP as it stands, would require more monitoring practices and this kind of thing done by, probably this membership union.

Could you -- could you elaborate on that for us, exactly what that would look like, if you're doing it now, and what would you expect to see?

MR. PARNELL: Martin, do you have anything on this piece?

MEMBER BERUBE: Can I get OPG -- yeah, OPG to speak to this?

MR. MANLEY: Okay. I apologize, I'm sorry. It's Robin Manley, for the record.

I'm going to ask Raphael McCalla to respond in terms of environmental monitoring practices and our program, and some of those details. Raph, over to you, please?

MR. McCALLA: Raphael McCalla, for the record.

So with respect to our environment -- our environmental management system, we do have monitoring programs that encompasses the entire site, not just the existing plant that we actually run. So as part of the

biodiversity program, for example, it's done site wide. It covers the Darlington lands as well.

In terms of groundwater monitoring, we do have monitoring wells in the general vicinity of that area where we do what we do all -- we also do some monitoring. We also have the overall environmental monitoring program for the site, which looks further afield, but it also looks at the near field, and part of that involves the Darlington New Nuclear site as well.

So yes, we have an extensive monitoring program, and it does encompass the entire site.

MEMBER BERUBE: And you know, given -- given the fact that you're looking at building administrative buildings, maybe some warehousing, new roads, stripping lines, you're going to obviously have to deal with groundwater management, which is going to affect some of your wells, I would think, your sampling points at this point, and collection areas. Any plans for that or is that still to early in the process?

MR. McCALLA: I'm sorry, I did not hear -- Raphael McCalla, for the record.

I'm sorry, I did not hear the last part of what you said.

MEMBER BERUBE: Have you done any planning for collection points of stormwater runoff and management

systems? Any of that planning done yet, or is it too early in the process?

MR. McCALLA: That -- Raphael McCalla, for the record.

That is too early to actually assess that aspect of it, but it will be part of the site preparation work that we do.

MEMBER BERUBE: Thank you. I have no further questions.

THE PRESIDENT: Thank you. Thank you very much for your intervention, Mr. Parnell, and your team. We appreciate that.

We'll now move to our next presentation, which is from the Canadian Nuclear Workers' Council as outlined in CMD 21-H4.38. We've got Mr. Bob Walker with us to make the presentation. Mr. Walker, over to you, please?

CMD 21-H4.38

Oral presentation by Canadian Nuclear Workers' Council

MR. WALKER: Thank you. Good afternoon, President Velshi and Members of the Commission. For the record, my name is Bob Walker.

The easy thing for me to do would be to just say the same as Jeff said. It sounded very much like

what I'm planning on saying. I am the Director of the Canadian Nuclear Workers' Council. The Council welcomes the opportunity to submit our thoughts on OPGs application to renew the site preparation licence for the Darlington New Nuclear Project.

The Canadian Nuclear Workers' Council was formed in 1993 as an association of Unions representing workers in all aspects of the Canadian nuclear industry. Most of the men and women employed at the Darlington site, which includes the Darlington Nuclear Power Plant and the Darlington Refurbishment Project, are represented by the Power Workers' Union, who you just heard from; the Society of United Professionals, who you will hear from next; members of the Provincial Building and Construction Trades Council of Ontario.

There is a written submission from LIUNA, who is a member of the Council, or the Society of Professional Engineers and Associates. Those unions, as well as the Durham Region Labour Council, are all Members of our Council, and they are all represented on our Board of Directors. That's relevant because those unions will be representing people employed at the New Nuclear Project as it evolves, and some of them as I mentioned, will be making submissions of their own.

I say this every time I make a

presentation to the Commission, but it's important and could not be overstated. Maintaining the highest standards of workplace health and safety is a fundamental value shared by the CNWC and all of our member unions. We live, work and play in the local communities along with our friends and families. When our workplaces are safe it's better for the environment and it's better for our communities. Our members are nuclear professionals and take their responsibilities seriously. Nothing is more important.

We recognize that the technology choice for the New Nuclear Project is outside the scope of this hearing. This application is for the renewal of an existing site preparation licence with a valid EA and no new scope. There is limited new information to discuss at this point. That being said, we believe that early and continuous engagement with labour is essential throughout the life of the project, and I'm happy to say those lines of communication are open.

We had a meeting with OPG last week for an update on the project and we have committed to regular monthly meetings. I have also made a commitment to our members to continue updating them as OPG completes their design selection process and submits an application for a licence to construct.

In 2009 OPG submitted an Environmental Impact Statement and application for a site preparation licence for their new nuclear project. The Nuclear Workers' Council participated in a number of OPG's community consultation sessions on the Environmental Impact Statement. At that time, I was an elected representative at Darlington with the Power Workers' Union and I was on the CNWC Board. I attended every one of those scheduled community events. I think there was even a couple additional events that were added afterwards and I -- and I submitted -- I participated in all but one of them. It was a very busy time, and they were exceptionally well attended and people were quite, quite happy to get the information. They were really good sessions.

Dave Shire was the President of the Nuclear Workers' Council at the time, and I worked very closely with him on this.

In 2011 a Joint Review Panel completed a public hearing on the Environmental Assessment. The CNWC participated in that hearing. Mr. Shire did that and I was also there, I was participating at the time on behalf of the Power Workers' Union.

The JRP concluded that the project would not likely result in any significant adverse effects. In 2012 the Government of Canada accepted the panel's

recommendation and OPG was subsequently issued a Power Reactor Site Preparation Licence. There was a Judicial Review, as was mentioned earlier today on this, and the decision was upheld.

That brings us to today and the purpose of this hearing. In 2020 OPG submitted an application to renew the current licence. The scope of the project is unchanged from the original application. The CNWC reviewed CMD 21-H4 and we're in full support of CNSC Staff assessment and conclusions. We believe the CNSC Staff considered the appropriate information and reached the appropriate conclusions. And I'll note just a few of them.

The scope of the renewal application is within the bounds of the approved EA. OPG has received a rating of satisfactory in all relevant SCAs at the New Nuclear Project. The Darlington site remains suitable and the existing licensing basis for the New Nuclear Project remains valid. OPG is qualified to carry out the activities authorized by the licence and in carrying out those activities, will make adequate provisions for the protection of people and the environment.

The CMWC also supports Staff's recommendation to renew the licence with amendments for a period of 10 years.

I'll mention a few of our additional

considerations that are in our written submission. The Darlington Nuclear Power Plant has a proven record of operational excellence and the highest standards of safety. This has been recognized repeatedly internationally. The Darlington New Nuclear Power Plant regularly meets or exceeds regulatory requirements for all SCAs. Those high standards have continued with the Darlington Refurbishment Project and OPG successfully completed a refurbishment of Unit 2 while continuing to operate the remaining units to those high standards. There is every reason to be confident that those high standards will continue throughout the development of the New Nuclear Project.

There is strong community support, as you heard earlier today, for the current nuclear power plant at Darlington, the refurbishment project, and the New Nuclear Project. OPG has proven to be a good community partner. That high level of community support has been consistent throughout Darlington's history, and I can say that because I was -- I was there when the Unit 3 was -- fuel was being loaded into Unit 3. So I was there for a number of years and I saw that level of community support.

OPG also has a very mature relationship with labour. The main unions at the Darlington Nuclear Power Plant are the Power Workers' Union and the Society of United Professionals. On health and safety matters there

is a high degree of cooperation between representatives of OPG, the PWU, and the Society. This collaboration between the workplace parties has resulted in high standards of workplace health and safety. The agreements that are in place now will encompass the New Nuclear Project throughout the different phases of the project.

OPG and OPG's contractors have similar relationships with representatives of the Ontario Building Trades and SPEA for the Darlington Refurbishment Project.

I know that socioeconomic factors aren't part of the CNSC's mandate today, but I would like to briefly mention a few. The nuclear industry is an important part of Canada's economy and a vital part of our clean energy future. Canada's nuclear power plants, including the Darlington plant, generate clean, reliable, affordable baseload generation and help lead the fight against climate change. Darlington generates about 20 percent of Ontario's electricity and has been doing that reliability for 30 years.

Our nuclear industry continues to pioneer work in the evolving field of medical isotopes, and I know you heard a little bit about that yesterday. Canada's nuclear industry supports high quality employment for tens of thousands of Canadians. There are between two and a half and 3,000 people employed at Darlington. These are

all high-quality jobs with working conditions and standard of workplace health and safety that truly are second to none. Those are the types of jobs we all need more of.

Our nuclear industry has bene very beneficial for Canada and Canadians and Darlington is an important part of that industry. New Nuclear will continue to benefit all of us.

In conclusion, there is a valid EA and a site preparation licence for the Darlington New Nuclear Project, and the scope of the project has not changed from the original application. The CMWC is in full support of OPG's application and CNSC Staff's recommendation that the site preparation licence be renewed for a period of 10 years.

I will be happy to answer any questions the Commission might have. Thank you very much.

THE PRESIDENT: Thank you, Mr. Walker, for your presentation.

Dr. Berube, we'll start with you.

MEMBER BERUBE: Well, thank you, Mr. Walker, for your presentation and taking the time to come speak to us. I have no questions.

THE PRESIDENT: Dr. Lacroix?

MEMBER LACROIX: Thank you, Mr. Walker, for your presentation.

I'm wondering, if this project goes ahead and eventually the nuclear industry may change in the sense that that may opt for a new technology. And your workers will have to get trained, acquire new skills, and I was wondering, will your Council or association get involved in the training program, the implementation and the development of a new training program for your members?

MR. WALKER: Thank you for that. The Council won't get involved directly in training; however, we do meet regularly, all the unions meet regularly. Our members are very highly skilled, those skills are very transferrable. A number -- number of them are skilled tradespeople, a number of them have college diplomas and university degrees. They are very involved in the industry.

We participate in Canadian Nuclear Society conferences and the CAN conference. So we are aware of the evolving industry, aware of the -- of the skills that are required today and will be required in the future, and we will -- we will be helping to transition to whatever -- whatever new skills evolve.

MEMBER LACROIX: Okay. You don't foresee any difficulties in -- I don't --

MR. WALKER: We don't foresee difficulty. One of the things about Candu is a very safe technology,

but it's also very -- it requires a lot of skills to operate the plant.

MEMBER LACROIX: Okay.

MR. WALKER: So the skills to operate other technologies might be different, same skill -- excuse me -- same type of skills, but different qualifications. So we have to make sure that people can -- can move to those new qualifications, as we know what they are.

MEMBER LACROIX: That's good. That's good. Thank you very much.

THE PRESIDENT: Mr. Walker, just a quick question of confirmation. So the site preparation activities would be carried out by members of organizations that are -- belong to your Council? Would all the work be done by them, as far as you know? Or not necessarily?

MR. WALKER: That's a -- that's a very difficult question. I don't know. I mean, some of that work is -- will be taking -- taking place on site with members, most likely of the -- of the Society of United Professionals. It could be some PW work, but also some of the contractors that will be doing work will drawn from the building trades. So if for example, LIUNA who you have a written submission from, they could be involved in some of that work.

But I think one of the important things is

to make sure that people doing that work are protected from the other activities that are happening onsite and they are covered off, because as you heard earlier, the Joint Committee in Radiation Protection etcetera, local committees, they will be covering off the site. So there could be -- as it evolves, there will be more PW and Society People rep on that, and building trades, but for today I don't really know. There's not a whole lot of activity happening today.

THE PRESIDENT: And Mr. Walker, you've read the application and you've read the submissions and CNSC Staff's assessment. Do you have any advise to the Commission on any additional requirements, any additional conditions, any additional commitments that we would -- that you would want us to ask OPG to make?

MR. WALKER: No. The only question in my mind is, I have to admit, when this whole thing first started, I was expecting a huge project. And then when I read the application and I read CNSC Staff's report, I realized that, no, this is a very simple exercise. The next one is going to be complicated.

So I think anything OPG can do to help prepare everybody for that would be helpful. And they are out -- reaching out to people now. They are doing a good job of that now and I think the more information, the

sooner, the better.

THE PRESIDENT: Okay. Thank you. Thank you very much for your submission and for appearing in front of us today.

Thank you.

MR. WALKER: I do want to just -- in closing I have a couple very brief comments.

First, I'd like to grateful acknowledge the support that we received from the participant funding program. That was very helpful and we're very grateful.

And this is something else that I say every time I'm given the opportunity. The continuous oversight of the Commission and CNSC Staff truly do serve to make our workplaces and communities safer, and we all appreciate it. So thank you to the Commission Members and CNSC Staff.

I truly look forward to talking with you again at a hearing in the very near future on an application from OPG for a licence to construct.

Thank you very much.

THE PRESIDENT: Thank you. Thanks for the kind words.

Okay. We will move to our next presentation, which is from the Society of United Professionals, as outlined in CMDs 21-H4.31 and 21-H4.31A.

And I understand that Ms. Michelle Johnston will being this presentation. Ms. Johnston, over to you, please?

CMD 21-H4.31/21-H4.31A

Oral presentation by the Society of United Professionals

MS. JOHNSTON: Good afternoon, President Velshi and Members of the Commission. For the record, my name is Michelle Johnston. I am the recently elected President of the Society of United Professionals.

You may recall our former President, Scott Traverse's appearances before you. I want to congratulate him on his recent retirement.

I'm joined today by Dr. Ralph Chatoor, an elected representative in our OPG local with expertise in regulatory affairs.

The Society is the union of choice for more than 8,700 Ontario professionals in the energy and legal sectors. Approximately half of our membership works in nuclear, including at Darlington, Pickering, and Bruce nuclear generating stations. Some of our members are directly engaged in the Darlington New Nuclear Project.

We are grateful for the opportunity to present to the Commission today. In the past the Society has been an active participant in licensing hearings with

the CNSC and we are pleased to be with you today to discuss OPGs PRSL licence renewal.

To summarize our position, the following OPGs work to address the issues raised by the CNSC. We believe OPG's PRSL licence renewal application should be approved.

Over to you, Ralph.

DR. CHATOOR: Madam President, Members of the Commission, for the record, my name is Ralph Chatoor.

The Society will be presenting in the following areas as articulated previously by other speakers, the scope of the project has not changed. However, the interval of time that has passed requires the Society to make comments in the following areas.

Choice of technology; as noted previously, in previous submissions, there has been no choice of technology made. We regard this as entirely appropriate given that the scope of the project merely aims to renew the existing licence. Notwithstanding, it is incumbent for us to comment on certain changes which we feel are of regulatory interest during that period of time.

President Johnston?

MS. JOHNSTON: As a Métis woman and the executive sponsor of our union's Indigenous Relations Committee, I am proud of the Society's deep support for

Indigenous communities' full participation in our sector's -- in our sector projects that affect them.

This is especially important in light of the Truth and Reconciliation Commission's 92nd call to action, which calls for corporate sector projects to commit to meaningful consultation, building respectful relationships, and obtaining the free, prior and informed consent of Indigenous Peoples. This is consistent with Section 35 of the *Constitution Act* 1982, which enshrines Indigenous Treaty rights in our *Constitution*.

I want to acknowledge OPG's work to date fostering relationships with Indigenous groups, including those with the Williams Treaties First Nations, the Mohawks of the Bay of Quinte, and the Métis Nation of Ontario Region 8.

The work to preserve precious artifacts unearthed in the DNNP lands at the Ontario Sustainable Archeological Repository demonstrates OPG's sincere efforts in this regard.

Ralph.

DR. CHATOOR: I'm trying to get my next slide.

Environmental risk. In the intervening period, during the last licensing period, species have been identified that are on the endangered list of those such as

Bank Swallows and the butternut tree. We are very encouraged and delighted to see that Ontario Power Generation has made a commitment as articulated by D-P-3.8 and D-P-3.7 to look to the preservation of those species. Those are captured in OPG's aggregate summaries report which forms part of the licensing basis.

We are particular pleased that these commitments have been carried through and OPG will establish an Environmental Management and Protection Plan and will be operationalized in the *License Condition Handbook* put in place to monitor the effects on the environment.

Madam President, I seem to be having some problems. Bear with me.

Nuclear and conventional safety.

The pith and substance, really, of running the station is nuclear safety and conventional safety.

As stated earlier by other intervenors and by OPG, the licensee is committed to conduct a comprehensive safety analysis once the licence to construction application is made wherein they will measure the prescribeds of whether or not the new technology falls within the licensing basis.

It is understood as well that on the conventional safety side, since no work has actually taken

place on the site, that an occupational health and safety plan will be put in place that will presumably identify risk and mitigation measures to protect workers.

Public safety and nuclear security.

This is of prime importance. Our plants -- Ontario Power Generation plants have operated in the Durham region for the past 50 years and there is a significant amount of public trust that has been built in by the community.

We're proud to say that our members have contributed by working to the highest standards to protect the community, the workplaces and the environment.

On the nuclear security front, OPG has a robust site security plan and, of equally importance is cyber security. Cyber security incursions are not heard of around the world in other types of industries. I understand that REGDOC-1.1.1 also articulates the cyber security requirements, and we are pleased to see that the licensee is taking this seriously and building these robust measures into their program.

Radiation protection and emergency preparedness.

When the site is going to be prepared, we understand that that will involve the licensee providing verification that workers preparing that site are not in

excess of non-Nuclear Energy Workers dose that is generated from the agent nuclear generating station and the waste management facility.

This will be captured by Ontario Power Generation's occupational health and safety plan.

Equally was important is the emergency preparedness. We understand that REGDOC-2.10.1 is the applicable instrument, and OPG's program was measured against that and there were no significant gaps.

The CMDs inform us that emergency planning governance will be augured to include whatever reactor design is selected.

President Johnston.

MS. JOHNSTON: As signatories to the Electricity Human Resources Canada Leadership Accord, the Society is an advocate for enhanced equity, diversity and inclusion within the energy sector.

We are encouraged by OPG’s commitment to a procurement process that emphasizes progress on equitable employment opportunities for people who hold identities that are traditionally under-represented within our sector. We expect that final vendor selection will reflect this emphasis on EDI.

DR. CHATOOR: In conclusion, the Society is satisfied that Licence Condition 15.1 and 15.2 ensures

that all mitigation measures will be put in place and those are operationalized in the *Licence Condition* Handbook.

Commitments will be tracked and reported through the Regulatory Oversight Report and through the Midterm Report.

In short, the Society supports OPG's application to renew its licence under section 4 of the *Nuclear Safety and Control Act*.

MS. JOHNSTON: To wrap up, our request of the licensee is to hold quarterly meetings with the Society to discuss two elements of the project as they develop.

First, the choice of nuclear technology, and second, OPG’s progress meeting the commitments noted in our submission.

Thank you for the opportunity to speak today. We will now welcome any questions.

THE PRESIDENT: Thank you very much for the presentation, Ms. Johnston and Dr. Chatoor.

And I'll ask Dr. Lacroix if he has any questions.

MEMBER LACROIX: Well, thank you very much, Mme Johnston and Dr. Chatoor, for the presentation and also for the submission.

I only have one question. And I found an intriguing sentence in your submission, and I quote:

"The Society is of the view that any new threats could only arise if the scope of the project has changed."

I'm intrigued by the word "threat". What do you mean, exactly? Could you elaborate on this?

MS. JOHNSTON: Ralph.

I'll get that one over to Ralph.

DR. CHATOOR: So threats meaning that if it falls outside the prescribed licensing basis.

MEMBER LACROIX: Okay. That's good.

Okay. Thank you.

DR. CHATOOR: As commented by Robin Manley a little earlier on today, any activity on that site would be measured against the established environmental assessment and licensing basis documents.

MEMBER LACROIX: Okay. I appreciate that.

I misconstrued the word "threats" in this context. Thank you very much.

THE PRESIDENT: Dr. Berube.

MEMBER BERUBE: Well, thank you very much for your presentation.

I have a question for OPG while we're on the -- talking to some of the organized labour that are working at your facilities right now.

Should this licence be approved, when do

you intend to start activities on the site? And give me some idea of what you're going to start first and, you know, where you intend to move from there because right now -- there wasn't really a project timeline in this, that I can recall, and I'm trying to understand, you know, how fast you're going to start moving on this if this licence is approved.

MR. MANLEY: Robin Manley, for the record. Thank you for the question.

And again, I'm going to call on my team here. Carol Gregoris will undoubtedly (stream lost / diffusion perdue).

THE PRESIDENT: Did we lose Mr. Manley?

Ms. Gregoris, do you want to start responding?

MS. GREGORIS: Carol Gregoris, for the record. So thank you for the question.

So the project -- sorry.

MR. MANLEY: ... larger project scope activities, and so the high level timeline is get a decision on the technology partner and project approval link this year and then start the site preparation actual physical activities around the spring.

And Carol -- sorry, Carol, that I interrupted you. Carol will provide a bit more detail on

the timeline.

MS. GREGORIS: Thank you, Robin.

Carol Gregoris, for the record. Robin, you broke up there. That's why we were talking over you. My apologies.

So as Robin was saying, this year -- really, the priorities this year, on site we are doing the geotechnical investigations, so we are doing the core samples and geotechnical soil works. We've also set up or we are in the process of setting up some air monitors to do the baseline air monitoring.

So all of those things are required for the commitments.

We're also working with technology developers to assess the technologies and put together cost and schedule estimates, so developing schedules for each of the various technologies.

And as Robin said, by the end of this year we plan to have a recommendation, a business case if we decide that the right thing to is to go ahead to our Board of Directors.

So once we have approval of the project next year, then we would be looking to go ahead with site preparation activities.

We're advancing the design of some of

those activities, the things I was discussing earlier, the early phase activities, so things like roads and parking lots, site services, that kind of thing. That design is being progressed this year to make it ready for next year when we would want to start some of those activities.

Following that early stage, we would go into the other areas that we talked about such as the buildings, the non-nuclear buildings.

Next year, we would be focusing on design, so for the Society, our professionals, our engineering staff, our project staff, the staff who work for us from the Society would be very, very involved in design and project planning works associated with the project.

And after that, you know, the licence to construct, we would be submitting licence to construct application and progressing the construction planning activities.

So we would expect that actual nuclear construction would probably start around 2025 if our current schedule is validated this year through the work we're doing with the various technology developers.

Thank you.

MEMBER BERUBE: And do you see any constraints to that at all in terms of accessing labour for contracted services or in-house services or are you in a

position where you're concerned about that right now or you're thinking about it, or where do you stand?

MS. GREGORIS: Carol Gregoris, for the record.

So we have a lot of very skilled, capable staff within OPG and we also have a very strong vendor supply chain who support our Pickering and Darlington nuclear stations, but in our area definitely we have a lot of support.

The building trades unions would be the ones who would be doing the site preparation activities on site and we have very strong building trades union around the Darlington site. Right now they're involved in the Darlington refurbishment project as well as other smaller projects, and we expect them to transition quite nicely into the Darlington nuclear project.

THE PRESIDENT: Thank you.

MEMBER BERUBE: Thank you.

THE PRESIDENT: Thank you to the Society of United Professionals for your submission and for appearing in front of us today. Thank you.

This concludes the oral presentations scheduled for today and brings us to the close of the hearing for today.

The hearing will resume tomorrow morning

at 9 o'clock, so thank you all for your participation and attendance today, and I wish you all a very pleasant evening.

Thank you.

--- Whereupon the hearing adjourned at 4:37 p.m., to resume on Friday, June 11, 2021 at 9:00 a.m. / L'audience est ajournée à 16 h 37 pour reprendre le vendredi 11 juin 2021 à 9 h 00