

**Canadian Nuclear
Safety Commission**

**Commission canadienne de
sûreté nucléaire**

Public meeting

Réunion publique

April 4th, 2018

Le 4 avril 2018

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

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

Commission Members present

Commissaires présents

**Dr. Michael Binder
Ms Rumina Velshi
Dr. Sandor Demeter
Mr. Timothy Berube
Dr. Marcel Lacroix**

**M. Michael Binder
M^{me} Rumina Velshi
D^r Sandor Demeter
M. Timothy Berube
M. Marcel Lacroix**

Secretary:

Secrétaire:

Mr. Marc Leblanc

M. Marc Leblanc

General Counsel:

Avocate générale :

Ms Lisa Thiele

M^e Lisa Thiele

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Ottawa, Ontario / Ottawa (Ontario)

--- Upon commencing on Wednesday, April 4, 2018
at 9:00 a.m. / La réunion publique débute
le mercredi 4 avril 2018 à 9 h 00

Opening Remarks

M. LEBLANC : Bonjour. Good morning.
Welcome to the public meeting of the Canadian Nuclear
Safety Commission.

This morning we have simultaneous
interpretation. Please keep the pace of speech relatively
slow so that the interpreters have a chance to keep up.

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

Please identify yourself before speaking
so that the transcripts are as complete and clear as
possible.

La transcription sera disponible sur le
site Web de la Commission dès la semaine prochaine.

I would also like to note that this
proceeding is being video webcast live and that archives of
these proceedings will be available on our website for a
three-month period after the closure of the proceedings.

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

I would like to note that we have a photographer taking a few pictures this morning and that will be for a few minutes only.

Monsieur Binder, président et premier dirigeant de la CCSN, va présider la réunion publique d'aujourd'hui.

President Binder...?

LE PRÉSIDENT : Merci, Marc.

Good morning and welcome to the meeting of the Canadian Nuclear Safety Commission.

Welcome also to those joining us via webcast and teleconference.

My name is Michael Binder, I am the President of the Canadian Nuclear Safety Commission.

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

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

So I would like to start by introducing the Members of the Commission.

To my right are Dr. Sandor Demeter and Ms Kathy Penney.

To my left is Dr. Marcel Lacroix, who is joining us for the first time. Alors, bienvenue et félicitations. And we also have Mr. Timothy Berube and Ms Rumina Velshi.

We already heard from the Commission Secretary, Marc Leblanc.

We also have with us here today Ms Lisa Thiele, Senior General Counsel to the Commission.

MR. LEBLANC: The *Nuclear Safety and Control Act* authorizes the Commission to hold meetings for the conduct of its business.

The meeting agenda was published on March 26th.

The minutes of the March 15, 2018 Commission meeting will be presented for approval at the next public Commission meeting in May.

Mr. President...?

CMD 18-M19

Adoption of Agenda

THE PRESIDENT: With this information, I would like to call for the adoption of the agenda by the

Commission Members, as outlined in CMD 18-M19.

Is everybody okay with that?

So for the record, the agenda is adopted.

The first item on the agenda for today is the Status Report on Power Reactors, which is under CMD 18-M20.

I understand that we have some representatives from the nuclear power plants in the room and we also have NB Power joining us via videoconference.

NB Power, can you hear us?

MR. POWER: Yes. Point Lepreau is here.

THE PRESIDENT: Okay. Thank you.

I understand, Mr. Frappier, you have some remarks. The floor is yours.

CMD 18-M20

Oral submission from CNSC staff

MR. FRAPPIER: Thank you.

Good morning, Mr. President and Members of the Commission. For the record, my name is Gerry Frappier and I am the Director General of the Directorate of Power Reactor Regulation.

With me today are the Power Reactor Regulatory Program Divisional Directors, plus technical

support who are available to respond to any questions, and, as you mentioned, the licensees are also available.

As you will note, the CMD Status Report was as of March 26th, 2018, so I have the following verbal updates.

Darlington Unit 3. The unit was shut down on March 30th, 2018, for a planned maintenance outage. The outage is planned to be completed by June of 2018.

With respect to Pickering Unit 7, there is a correction. It is at full power and not shut down as indicated in the update. This was an administrative error on our part. Unit 7 was not shut down on March 26th.

This concludes the Status Report on Power Reactors and the CNSC staff can answer any questions that there might be.

THE PRESIDENT: Okay, thank you. Let's start the questioning with Dr. Demeter.

MEMBER DEMETER: Thank you.

It has only been a short while since the last report, but I was curious to see if there was any update on the Darlington refurbishment alpha incident relative to worker dose, if that had been nailed down, and whether there has been any -- as I recall, the refurbishment was such that the environmental monitoring didn't pick up the alpha, but it was picked up when it was

actually in the point of contaminating a worker based on the whole body. Has there been any change in operating procedure to preclude that from happening again? Is there any closure to that issue?

MR. FRAPPIER: Gerry Frappier, for the record.

We expect to come back to the Commission with a more fulsome conclusion once both our reactive inspection and all the other data is available. However, for a status update right now on the items you mentioned I would ask Nathalie Riendeau, please.

MS RIENDEAU: Nathalie Riendeau, Director of Darlington Regulatory Program Division.

OPG has completed the dose assessment from the event. As we indicated at our last update, the doses are well below the action level or any regulatory limit. They are in the order of 40 millisieverts -- microsieverts, sorry -- I apologize -- and right now our inspectors onsite have confirmed that the condition in the field are appropriate for alpha level III conditions in the retube waste processing building. They have completed the field portion of their reactive inspection. They are currently conducting their review of OPG's records and our observations against criteria and we will communicate our preliminary finding to OPG next week as per our process and

our reactive inspection. The report from our reactive inspection will be available 60 days following our exit meeting.

MR. FRAPPIER: I'm not sure if Ontario Power Generation may want to add to that.

MR. MANLEY: Robin Manley, for the record. I am the Vice President of Nuclear Regulatory Affairs at Ontario Power Generation.

I don't really have anything to add except to say that as usual with our practice of continuous improvement we look for opportunities to improve the program. We have learned from that event and we think that we have a robust alpha program in place. You know, the exposure was detected and corrective actions immediately taken into account and put in place, and whatever comes out of the CNSC inspection and our own investigation of the event we will look to implement and reduce any potential for this to happen again. Thank you.

THE PRESIDENT: Thank you.

Ms Velshi...?

MEMBER VELSHI: Thank you, Mr. President. No questions, just my compliments to the licensees and staff for an exemplary status report. Thank you.

THE PRESIDENT: Thank you.

Ms Penney...?

MEMBER PENNEY: Back to the Darlington alpha incident. A question for OPG in terms of how you transfer knowledge from one facility to another in the case of an incident. How do you learn from incidents across facilities?

MR. MANLEY: Robin Manley, for the record. So I can speak particularly in this case in radiation protection. OPG has an internal peer team, if you will. Essentially, the certified responsible health physicists meet regularly in person and also by teleconference. They have minutes of meetings and all of these kinds of events that occur are discussed amongst them at that Health Physicist Peer Team as well as through the Radiation Protection Manager Peer Team. And then to ensure that the lessons learned aren't just in people's heads, we also have our Corrective Action Program. So those corrective actions are documented in our Station Condition Event Report System. And then if there are actions that require changes in the program itself, those would go into our governance or our training as appropriate so that the knowledge is not lost.

THE PRESIDENT: Thank you.

Mr. Berube...?

MEMBER BERUBE: Just if you could, staff, give me a quick update on the situation at the Bruce with

the triple seal failure on the PHT system?

MR. FRAPPIER: Gerry Frappier, for the record. I will ask Luc Sigouin to respond.

MR. SIGOUIN: Thank you. Luc Sigouin, for the record, Director of the Bruce Regulatory Program here at CNSC.

So as we reported recently for this event, Unit 4 had been shut down because of a triple pump seal failure and the unit had been safely shut down. When the cleanup was undertaken, doses to workers were minimal and the cleanup was undertaken effectively. Since then Bruce Power has performed a technical operability evaluation to understand the impact of this on other units in the station and Unit 2 was removed from service as a result of some indications of higher vibrations on one of the pumps and that pump has been serviced. Enhanced vibration monitoring equipment has been returned -- has been installed and Unit 2 has returned to service.

As far as the root cause investigation for the Unit 4 pump seal failure, Bruce Power has started the process and that process is underway. There is no preliminary information or findings that are available at this time. The expected completion date for the root cause is later in May, so we will have more information available at that time.

Bruce Power has put in place mitigating measures, if you will, operation conditions to minimize the impact of another seal failure if it occurred pending the root cause investigation, as well as putting more restrictive operating conditions on the indicators for potential seal failure so that the units can be shut down more promptly. CNSC staff have performed a reactive investigation of this and we have also formally communicated to Bruce Power that we will be doing more formal enhanced oversight of their root cause investigation process and any mitigation work that they are going to be doing towards this in the future.

MEMBER BERUBE: Thank you.

THE PRESIDENT: You know, just as a suggestion, rather than us remembering ourselves, it would have been nice for you guys to put some updates on outstanding -- even though it's not complete, you don't have to wait until the report is completed to give us a quick update about some of the outstanding issues.

Dr. Lacroix...?

MEMBER LACROIX: I have no questions for the moment. Thank you.

THE PRESIDENT: Anybody else?

Okay, thank you. Thank you very much.

The next item on the agenda is an Update

on Emergency Management in Ontario and the Provincial Nuclear Emergency Response Plan, better known as PNERP.

This is presented by a representative from the Office of the Fire Marshal and Emergency Management and I understand that Mr. Morton, you will start. I'm just reading what it says here. So over to you.

CMD 18-M21

**Oral Presentation by the
Office of the Fire Marshal and Emergency Management**

MR. MORTON: Thank you very much.

Good morning. My name is Mike Morton, I am the Director of Emergency Management with the Office of the Fire Marshal and Emergency Management with Ontario's Ministry of Community Safety and Correctional Services.

I am joined by Mr. Dave Nodwell, to my right. Dave is our Deputy Chief Responsible for Planning and he has direct oversight of the Provincial Nuclear Emergency Response Plan.

Also at the table with us this morning is Lorie Whitcombe. Lorie is our Senior Scientist.

And in the audience we have Mr. Jonathan Stone, who is our Manager of Planning, as well as Emma Fuchs, who is one of our Nuclear Planning Officers.

I would like to begin today by providing a general overview of emergency management in Ontario. This will provide some important context as we head into the Pickering and Bruce licensing hearings and hopefully provide a good introduction for newer Members of the Commission and for the public.

Once I have spoken about that, I am going to turn over to Dave and he is going to take us through some of the general context related to the PNERP and the enhancements that we have made as a part of the new 2017 PNERP.

Emergency management in Ontario is governed by the *Emergency Management and Civil Protection Act*. This Act came into effect in 2003 following the ice storm of 1998 and the attacks of 9/11. The Act was enhanced in 2006 following the SARS crisis and the North American blackout.

Under the Act authority is given to our office, the Office of the Fire Marshal and Emergency Management, to monitor, coordinate and implement emergency management programs across the province. These take a variety of shapes.

Primarily we focus on municipal and provincial ministry programs. Each of our 444 municipalities in Ontario implements a mandatory emergency

management program that consists of 13 program elements that are outlined in *Ontario Regulation 380/04*.

Our ministries of government all have programs which require 14 mandatory elements roughly mirroring the municipal programs with elements such as an emergency plan, risk assessment, emergency operations centre, emergency information plan, and so on. The ministries also have an added responsibility to ensure the continuity of their critical government services and to develop and test annual plans to ensure that they can perform their emergency duties and deliver vital public services during outages or other disruptions that may occur.

In addition, we have 13 ministries of the government that are allocated additional responsibilities under the Act. These are both functional responsibilities as well as hazard-specific responsibilities. For example, Ministry of the Environment and Climate Change would have responsibility for water quality emergency. Those responsibilities are outlined in an annex to the presentation that has been provided.

It is a time of great change in emergency management globally and also here within Ontario and we are excited about a number of new initiatives that we have underway. There's a number of factors that are driving

these changes and affecting our current thinking on emergency management.

One of the largest is climate change and we are working on a whole of government effort with various ministry partners to respond and adapt to a rapidly changing risk environment that is seeing an increase of natural hazard events and in particular placing greater emphasis on flood events which are occurring with a greater frequency and causing historic levels of damage in terms of cost and insured loss.

We are also monitoring a number of new technological changes and working to incorporate those into emergency management. This involves everything from enhanced use of software to share information, GIS applications, UAVs, and even things like the current advancement toward wireless public alerting, which comes into effect this Friday.

More generally, the lessons of major disasters of the last decade have placed a greater emphasis on ensuring that emergency programs are in place for vulnerable populations and placing a greater emphasis on community resiliency. For example, Hurricane Sandy in the United States that affected cities such as New York showed the importance of inclusivity in emergency management and emergency planning and an ability to proactively reach out

to all residents of major urban areas, particularly those who may have special needs or disabilities. So for us in Ontario that's an increasing focus of importance.

We are also looking at whole communities that we feel historically have been underserved by emergency management programs and in Ontario that would include our First Nation communities, so we are working closely with Indigenous Services Canada as well as the Chiefs of Ontario to look at ways in which we can support the development of equitable emergency management programming for First Nation communities in Ontario.

Very closely related to this is an increasing focus on relief and early recovery activities, so developing our programs in areas that go beyond that immediate lifesaving phase that is typically thought of when we think of emergency management. We think of rescues, people being taken out of floodwaters, immediate evacuations. We are placing a greater emphasis on what comes immediately next and how do you ultimately restore communities. This is an effort that engages partners that are not necessarily what we think of as our traditional partners in the emergency services who play those vital lifesaving roles, but also members of the broader community as we shift toward more of a whole of society approach to emergency management that focuses increasingly on social

services, public works, the not-for-profit sector, faith-based organizations, and so on.

So ultimately a much more inclusive model that is consistent with another driver of our thinking at this time and that's value of money, looking at how we can measure the impact of program investments on emergency management, which is increasingly focused on prevention and mitigation activities as an international trend that we are seeing and very much playing out here in Ontario, to ensure that maximum value is achieved from each dollar that is invested in emergency management.

So very closely related to that, and as Members may be familiar with, a number of recent public reports that have assessed emergency management in Ontario.

The first one that is represented on the slide here is the Auditor General's Value for Money Audit that was delivered just this past December and made 13 recommendations about our program here in Ontario.

We are also reiterating a lot of the progress that has been made under the *Emergency Management Civil Protection Act* since the ice storm and 9/11.

We also commissioned an independent third-party report, our Emergency Management Review, which was delivered in a similar timeline, late in 2017. That, along with the Auditor General's Report, are posted on our

website and can be viewed by the public at Ontario.ca.

Three other reports that are contributing to our forward direction on emergency management, both generally and help influence us on our PNERP, include our Ice Storm of 2013 After Action Report, which again focused a lot on the ability to deliver assistance to urban populations and vulnerable populations; our Report of the Commission of Inquiry for the Elliot Lake Mall Collapse; and our Study on Supply Chain Management which was also in follow-up to the ice storm and recommended a number of enhancements for improving our capacity to deliver aid on a large scale.

These reports have highly influenced our strategic framework for the next years here in Ontario and on the screen you see a quick summary of what we are calling the Emergency Management Action Plan, or the EMAP. It has five major goals. It was announced by the government late in 2017 and this Action Plan takes measures to address all of the recommendations of the Auditor General's Report, of the independent third-party review, as well as the three other reports that I referenced on the previous slide. So over the next years we are taking action and the government has committed to measures that will address again all of the recommendations of the reports on a very aggressive timeline.

The five major themes that you see up there cover a variety of aspects of our program, and I won't get into all of the particular bullets, as again their presentation is posted publicly, but you see some of the themes there, which include a strengthening of our governance and oversight, and just recently our deputy ministers from across the government met, as did our cabinet committee on emergency management. One of the measures out of those meetings was enhancements to our internal program of governance which will involve a deputy ministers committee on emergency management to ensure ministerial cooperation, as well as some new working committees at the ADM and directors levels.

A significant part of the action plan is also a commitment to review the *Emergency Management and Civil Protection Act* fully. That process will be kicking off soon. We will be -- on the third list of items there, you see that we will be updating all of our major provincial plans. This work is already underway with both our provincial emergency response plan, as well as our provincial nuclear plan, which Dave will be speaking about in just a moment.

We are also taking a number of measures under the fourth and fifth goals to enhance our capacity to respond to large scale events, including the procurement

and deployment of emergency management software across all ministries and municipalities with Ontario and significant enhancements to our supply chain logistics system.

Some additional measures under our business plan are listed on Slide No. 8, and again I won't go through all of these as you have the presentation, but I will draw attention to just a couple.

The second bullet speaks to new provincial exercise strategy and program. The development of that is well underway, and we would be happy to speak more to that at any time, and essentially creating a multi-year outlook for our exercise activities, including our nuclear exercise activities and ensuring that our programs are based on assessing improvements that have been made.

So rather than repeatedly identifying the same issues or areas of improvement for our various plans, including the PNERP, and then constantly testing those and just reaffirming that they are still not fixed, we want to get into a good cycle of identifying corrective actions, having a clear plan to address those, and when we feel they have been addressed, testing that element based on the corrections that have been made, and only putting in the effort to test that once those corrections have been made, so really, a complete continuous improvement cycle. And again, we can speak a little bit more to that if members of

the Commission have questions about that.

I think at this point, what I will do is turn it over to Dave. He is going to begin by talking about offsite and clear emergency response in Ontario in general, and then he'll get into some very particular enhancements that have been made to the PNERP.

So Dave, over to you.

MR. NODWELL: Good morning. Dave Nodwell, for the record.

We have a fair number of slides here. I think, in the interests of time, I will move through them reasonably quickly so that there is time for questions and engagement.

For the benefit of new Commission members, I'd like to provide a little bit of context in terms of nuclear planning. Mr. Morton already spoke to the *Emergency Management and Civil Protection Act*, and key within that Act is the section 8 which is a requirement for a plan for nuclear and radiological emergencies. It's the one hazard that is, in fact, identified in the particular act.

It's particularly important to understand that, in terms of the role of the Province, we are dealing with the offsite consequences to ionizing radiation that goes beyond the fence line at one of these facilities. So

the onsite response is the responsibility of the facility with the oversight of this Commission. The Province is the authority having jurisdiction beyond the fence, and dealing with those potential consequences.

These responsibilities are executed in concert with a number of organizations. This is a very multi-jurisdictional response that includes the facility itself, municipalities, provincial ministries, and federal departments supporting. So it's an all-of-government, if you will, response and that goes into the planning process.

The master plan itself describes the general roles and responsibilities for the response to a nuclear or radiological emergency in Ontario. Underneath the master plan are a number of site-specific, largely implementing plans, which operationalize what is laid out in the master plan.

All major organizations that are involved, municipalities, the MPPs themselves, and so forth, are involved in developing their own plans that are consistent with the requirements of the PNERP, and as laid out in the PNERP.

We do have a committee comprised of all of the response organizations that meets on a regular basis, approximately three times a year. It's called the Nuclear Emergency Management Coordinating Committee. We come

together to enhance nuclear planning in the province, working on the plans themselves and the operationalization of those plans.

In the event of an actual response, the facility that is primarily involved in directing the response is the Provincial Emergency Operation Centre, located in Toronto. As I mentioned the last time I was here, we would be pleased to offer a tour of the PEOC to any Commission members who would be interested in seeing that facility. It is a very effective facility and one that we are very proud of. We also regularly -- and I will speak more to this -- participate regularly in nuclear drills and exercises.

We have been under a major initiative recently, in particular to get the master plan updated. This was done and approved in December of 2017 after an extensive public consultation and input from all of the organizations with named responsibilities in the plan.

The public consultation was carried out and, in fact, it was the first time that we had done this with the PNERP. To deal with the disposition of those comments that were collected during the consultation period, an advisory group was formed and comprised of national, as well as international experts, to assess the comments and provide recommendations to the minister.

These recommendations, along with a number of other things, were incorporated into the new PNERP master plan and, in a nutshell, make the plans much more transparent and accountable, increased alignment with national and international standards, so specifically the CSA N1600 standard, as well as the IAEA GSR Part 7.

A very quick overview of the public consultation process: There were two documents posted. One was the planning basis discussion paper which talked about the planning basis for the plan, as well as a list for the proposed changes to the plan. Those were posted for a period from May 15th, 2017 to July 28. It was a longer than normal public consultation, due to requests from intervenors who required more time to digest the information and provide their information to us.

We received during that period of time approximately 1,600 submissions, nine of which -- nine municipalities and federal government stakeholders. There were 33 individual different organizations and 1,526, to be precise, individuals, of which there were 440 unique comments with over 1,000 submissions from two separate letter-writing campaigns.

As I mentioned, the advisory group was appointed by the minister to review these comments and provide recommendations on the incorporation of the public

feedback into the master plan. This advisory group met in Toronto towards the end of August and they conducted in-person consultations with a number of intervenors and spent the balance of the week in terms of deliberations and the formulation of the report.

In the report itself -- and I'll go through this fairly quickly -- but there were 15 major recommendations. In general -- in general lines, providing for more robust justification and clarification of the rationale of principles and the assumptions that go behind the plan, to conduct more detailed and definitive technical assessments for future iterations. I will be speaking in more detail in terms of that technical assessment which is under development right now.

It encouraged implementing more formal procedures around the regular review of the PNERP with additional requirements for transparency and public engagement. So that is now a formalized process of the PNERP review. Clearly, communicating linkages between the PNERP and other plans that we have in place was a recommendation as well.

Some other results of the advisory group report: They found that the assessments that were used in the planning basis discussion paper were very highly sensitive to radiological source term selection and of

limited scope. So they have actually made the recommendation that we move forward with a more detailed technical assessment which is underway.

Despite some of the limitations that they found with this particular work, they found that the existing planning zone sizes are appropriate for a single unit unmitigated accident as well as multi-unit events where some of the post-Fukushima improvements have been credited in the source term calculation. They found that the planning zone sizes may require revision if the bases include a multi-unit failure where none of those post-Fukushima improvements or mitigating actions have been credited.

The technical study -- and as I mentioned we are just underway with that process -- has a number of objectives, one being to assess the potential impacts of whether topographical features on those projection modeling. So this would be more enhanced meteorological data over a period of one year. It would also take a look at local topographical and meteorological conditions that may be caused by local features.

This was one of the recommendations that came out of the intervenors from the Bruce area, in particular, where they have thermal inversions which they wanted to see incorporated into the analysis. It would

identify any requirement to expand protective measures, including KI presentation-distribution, so the KI component is a formal part of the technical study.

This study will be completed by the end of this calendar year, 2018, and we would at that time, based on the results of this analysis, propose options for revisions to the PNERP, or implementing plans to our minister as a result of that study.

The master plan updates, there are quite a few updates to the plan. I will run through, at a very high level, what those changes are at this point.

There are new administrative requirements in section 1.3 with a formal five year plan review cycle. This is the intent to uphold the Province's commitment to transparency and accountability. So in that section the PNERP requires consultations with the stakeholders who are involved, but also the public. So we will be going through that public consultation on a regular basis. Any review of protective action strategies or modifications would be done in consultation with designated municipalities and other impacted municipalities.

The master plan was aligned with national guidance. I referenced CSA N-1600 earlier as well as GSR, Part 7; aligned with both of those documents and also aligned with Health Canada operational interventional

levels. So we have brought the plan into alignment with the recommendations from Health Canada; updated descriptions on planning basis accident scenarios and severe accidents, so more detail about what kind of an accident are we looking at.

Of major change is the addition of a Contingency Planning Zone. This is a new zone 10 to 20 kilometres from the reactor facility. I will be speaking in more detail around that contingency planning zone.

The concept of operations section has been enhanced in the plan, as well as improved ease of use and terminology.

There are new program management requirements built into the plan, such things as defining and documenting training requirements, the development and documentation of exercise program requirements; more detailed descriptions around emergency phases and the transition to recovery.

There is a new section on the management of radioactive waste based on national and international guidance, as well as a new annex with the detailed rationale behind the planning basis, including planning zone sizes, so more information on that in the master plan.

The names of the zones have changed. Those who have been around will remember the primary zone,

the secondary zone, and so forth. We brought these names in line with the terminology from CSA N1600.

So the three kilometre zone immediately surrounding the reactor facility is now referred to as the "Automatic Action Zone", which is descriptive of what happens in that particular area.

What was the 10 kilometre primary zone is now the "Detailed Planning Zone". So that's the area where detailed planning is required where you would anticipate, for example, the need for evacuation in a very severe accident.

I mentioned the "Contingency Planning Zone". So this extends out to 20 kilometres and is an area where contingency planning and arrangements would be made in advance so that protective actions can be extended beyond the Detailed Planning Zone. We have often spoken about the flexibility of the PNERP and our ability to implement protective beyond the nominal 10 kilometre area. This articulates how the Province would go about doing exactly that.

And then finally, out to 50 kilometres, which was the secondary zone, we now refer to as the "Ingestion Planning Zone". So again, descriptive in terms of what is actually conducted in that area.

A bit more on the Contingency Planning

Zone: So it is intended to be used where required in severe, low probability accidents which could result in consequences beyond the Detailed Planning Zone. It doesn't require the same level or type of detailed arrangements that you would find in the Automatic Action Zone or the Detailed Planning Zone.

Response activities within that area may occur in the event of localized radiological releases or contaminations, so dealing with the typical hot spots or something like that that might occur beyond the 10 kilometres.

There is greater clarity which has been set out in a specific annex of the implementing plans for Pickering and Bruce, that talks about this zone in more detail.

It requires that municipalities look at all of their response centres that may fall within the CPZ and the development of possible alternates outside of the CPZ. So if there was to be -- if there was the potential contamination at an emergency worker centre or an emergency operations centre within 20 kilometres, that they would have pre-identified facilities that they could move their location to.

Iodine thyroid blocking requirements are consistent of those with the Ingestion Planning Zone.

There are public awareness and education requirements out to 50 kilometres that are part of this.

No requirement for the designation of additional emergency response centres and no additional public alerting and communications requirements beyond what is already established for the Detailed Planning Zone.

I would point out that we would be using provincial resources for public notification and public alerting and we have new systems coming into place, effective this Friday, which will make that very useful to us.

There are requirements that appropriate funding be put in place and administrative oversight and, as is identified in the master plan, reactor facilities are required to assist the Province and designated municipalities in their planning and preparedness for a nuclear emergency, which is an ongoing relationship that we have with the facilities.

The protection of emergency workers, Annex H, has been revised to reflect Canadian Guidelines from Health Canada for emergency workers. There is transportation management and evacuation planning. This has been modified to a Unified Transportation Coordination Centre and basically modelling on the provincial experience with the Pan Am Games which will be brought to bear in the

PNERP.

The coordination of emergency information, we have moved some of this back to a joint information centre where those entities that would be dealing with the public, municipalities, the facility, the Province, and federal agencies which would be able to actually physically meet in a joint information centre to coordinate public messaging that goes out, and so forth.

So this is actually going back to previous iterations of the PNERP, incorporating this particular aspect.

With respect to KI pills, the new PNERP uses Health Canada guidance of a 50 milliSievert intervention level. We are maintaining pre-distribution within the Detailed Planning Zone to a nominal level of 10 kilometres, but it is also available to anyone who wants it within 50 kilometres from a nuclear power plant. This process meets the current REGDOC 2.10.1 from CNSC.

A new section providing more clarity around the care and protection of animals, in particular dealing with livestock and the role of the PEOC, and the Ministry of Agriculture, Food and Rural Affairs; a new requirement for municipalities to document their emergency response organization training plan and exercise program, additional requirements for designated municipalities, for

example, ensuring that all municipal personnel assigned functions under the plans are suitably trained for their tasks and so forth, so there's significantly more guidance in terms of training and exercises.

Protective actions. I think really what I'd like to point out here is that it is the provincial chief medical officer of health that makes the decision regarding KI ingestion.

The master plan has introduced actually three phases in which protective actions would be considered, we have early, intermediate, and recovery, so there's more guidance specifically related to the implementation of protective actions at those stages.

Next steps. There is certainly a lot on the go. Evacuation planning is a big part of that. Ministry of Transportation is the lead and are updating traffic control plans and putting them into the unified transportation management plan, which I spoke to a few minutes ago. This is a subcommittee of the Nuclear Emergency Management Coordinating Committee, so it reports to that committee in terms of their activities.

In the interim, existing joint traffic control plans would be utilized while that work is being done.

Recovery phase planning has been

identified as a next step and is planned for development with the participation of any MCC participation, and aligning it with Health Canada and CNSC's framework document on recovery, which I know has gone out for public consultation and is being reviewed. This may form a separate plan or perhaps an annex to the PNERP, but it's clear that recovery planning is something that needs to be documented and articulated.

There is a lot of work going on with the Environmental Radiation and Assurance Monitoring Group, or the ERAMG -- a bit of a mouthful for an acronym, but it works for us.

This plan essentially represents what's being coordinated out of the science section in the Provincial Emergency Operations Centre and is under significant review in terms of a concept of operation for all of those PEOC-based roles, as well as the field teams who are going out and doing the actual monitoring. This is a very detailed plan. It's currently being reviewed by stakeholders. It aligns with the revised PNERP, but also aligns with CSA N1600, and a number of standards from the IAEA.

As this plan is formalized, planning is under way for a workshop and a tabletop exercise that will test and validate the new concept of operations for that

group.

Supporting plans will be an important next step. As the master plan has been completed, and implementing plans become completed, it is time that ministries and municipalities bring their own plans into alignment with the changes made in the PNERP. That would be a process that would take approximately 12 months, and will be under way very shortly. In the interim, existing implementing plans would be utilized. Where there is a conflict with the 2017 master plan, the latter would take precedent as much as possible.

Some other related initiatives, OFMEM is conducting PNERP information sessions for municipal stakeholders. This has been going on now for approximately two months, two-and-a-half months perhaps. We've been meeting at the municipal level with various counsels, and at the staff level as well, in the area of Bruce and Amherstburg, as well as Durham Region in Toronto. Those have been very good sessions to inform staff and elected officials in terms of the new master plan and what it looks like.

There has likely been discussion that we are participating in an emergency preparedness review, or an EPREV, being conducted by the International Atomic Energy Agency. That is being scheduled for June of 2019,

so we're in the preparatory phase of getting ready for the EPREV.

We have ongoing nuclear drills and exercises. The next full-scale exercise would be associated with Bruce Power in October of 2019, and we're just in the initial stages of discussion with Bruce on that particular point.

We will have ongoing updates to the balance of the PNERP implementing plans. As I mentioned, we have a total of seven implementing plans which we will be working on, and an ongoing review and alignment to all of our nuclear procedures and emergency bulletins.

That concludes my presentation. My apologies if we went a little bit over what had been scheduled.

THE PRESIDENT: Thank you.

You gave us a lot of material to think about here. Let's jump into the question session with Ms Penny.

MEMBER PENNY: Thank you for your presentation.

I'm interested in your technical study, which is going to build on, and I guess change again, some of the PNERP plans, especially where it relates to Bruce. You said that intervenors had concern about inversions in

the Bruce area, and that the technical study would look at I think modelling and weather patterns. My question has to do with what the changes could be, if they have any impact on that contingency planning zone, and when those changes would be available in implementing plans for that area.

MR. NODWELL: Thank you for that.

Dave Nodwell, for the record.

It's difficult to anticipate what the results of the technical study will be at this point, or what in fact the implications will be for the PNERP for the master plan and the implementing plans.

If we do get results from this technical study that indicate that there does need to be a change, the commitment is made that we would be conducting the appropriate changes in the master plan and implementing plans. It may, however, validate the existing planning basis, and so forth, in which case those kinds of changes wouldn't be required, but it really boils down to what the technical assessment does.

They will be looking at 365 days of weather data. As I mentioned, they're looking at local topographical features and the thermal inversions, and things of that sort, in terms of the impact that would have on a plume and its characteristics.

We would, as a part of this, be looking at

water quality studies, a focus on radioactive iodine, the need for KI, as well as other protective actions, so we really count on this as being very, I think, definitive guidance in terms of an appropriate level of preparedness for a severe accident at a CANDU power plant in Ontario, so, unfortunately, I can't anticipate what that report will contain.

THE PRESIDENT: Okay, but you've got to give us a conclusion here.

Until you get all this data, tell us what you think about the existing plans, are they sufficient, are you comfortable with them, for an unforeseen, if you like, suggestion that comes from the study.

MR. NODWELL: Yes. Thank you.

One of the documents that was put out to public consultation was the planning basis discussion document, which took a look at an analysis of a severe accident occurring at a CANDU plant. This particular accident was based on a PSA provided by Ontario Power Generation, which we used to model that. This particular PSA was a total station blackout with no operator intervention for a period of 12 days -- sorry, 12 hours, not 12 days -- so it is considered that this is a particularly bad accident. I think that it borders on the incredulous in that it accounts for no operator

intervention for that period of 12 hours, which in my mind is not realistic, but that's what we went with. This was based on discussions with our colleagues at Health Canada and staff at CNSC to take a look at this particular PSA as the severe accident.

As was recognized by the advisory group, they felt that this was very adequate for a single reactor unmitigated accident or a multi-unit accident where you factor in some of the EMEs and post-Fukushima enhancements. Based on that, we feel that we do have a very strong plan in the interim that would deal with severe accidents. This may require some tweaking as a result of the technical study, that we can't speak to, but in the meantime, we do feel that we have a very strong plan that appropriately reflects a severe accident arising at one of these facilities.

One other point as well. If we look at the analysis that was undertaken on this particular accident, we used a threshold of 50 millisieverts at that time for the analysis in terms of the need for evacuation. Based on 50 millisieverts, the evacuation required in this particular accident was out to eight kilometres but not beyond eight kilometres, so in my mind that certainly substantiates the nominal 10-kilometre detailed planning zone.

Adopting Health Canada's generic criteria, however, the protective action level, if you will, for evacuation is now at 100 millisieverts, so if we were to use that instead of the 50 millisieverts, it would even further decrease the need for evacuations. I'm not sure to what extent if we're moving from eight kilometres to four kilometres. Nonetheless, that needs to be factored in, and I think further supports my position that it's a strong plan and appropriately positioned for a severe accident.

THE PRESIDENT: Thank you.

Mr. Berube.

MEMBER BERUBE: My question has to do with looking at the whole structure of the PNERP structure as it's being implemented. PNERP, at least the master plan, seems to be your high-level strategic plan for the province, and then you're going down into operational plans for each area, is that correct, so right now we're still working on the PNERP master plan that hasn't actually been completely massaged yet and is in place, or am I incorrect in that?

MR. NODWELL: Thank you. Dave Nodwell, for the record.

I'll provide an update in terms of both the master plan and the implementing plans.

The master plan is fully in place. That

was approved by cabinet in December of 2017. It's been published to our website. Stakeholders have it. The public has it.

We have also been working on two implementing plans immediately following that, one for Bruce Power and one for Pickering. Those plans have been approved and will be posted within weeks, so we'll be able to get into the details of those implementing plans at Day Two hearings that we have coming up.

Our plans are for the balance of this year to look at the Darlington implementing plan, as well as the Amherstburg implementing plan for the Fermi 2 reactor in Michigan.

Subsequent to that, which takes us into 2019, we'd be looking at the trans-border plan, so the plan for those events that occur outside of our country, realistically on the south side of Lake Ontario and Lake Erie, as well as the other radiological plan, which deals with things such as transportation accidents, satellite re-entries, or those kinds of other radiological issues that might arise and have to be dealt with.

The one that I didn't mention is Chalk River that we have traditionally had an implementing plan for. Given the NRU shutdown, we'll be reassessing the need for a separate implementing plan for Chalk River. They're

currently putting some information together for us for our review and our deliberations with respect to that particular implementing plan.

THE PRESIDENT: Thank you.

Dr. Demeter.

MEMBER DEMETER: Thank you.

First, just a comment to maybe help you out a bit.

You spoke about that the decision to administer KI pills be made by the chief medical officer of health, who from an optics point of view is quite removed from a lot of these localities. You have a document in 2014, the potassium iodide guidelines, by the ministry, and it's clear in there that decision is made in consultation with the local medical officer of health and your organization, so I think it's important for people to understand that the medical officer of health, who has the most knowledge, content and connection to that community, is clearly in that loop versus that decision being made at Queen's Park kind of thing, just to help your optics, because someone reading that would say that decision is being made quite distant to the event, and there is a lot of consultation in your own documentation, unless you've updated the 2014 potassium iodide guidelines.

The question I had is on emergency

preparedness for other localities, such as around Hamilton, with their research reactor. What is your role in those sorts of other smaller nuclear facilities in and around, outside of nuclear power plants, but these other agencies?

MR. NODWELL: Thank you for that. Dave Nodwell, for the record.

The McMaster reactor, along with other ones, the Royal Military College has one, are covered by the other radiological implementing plans, which I just spoke to. I neglected to include those particular sites in my description. It also deals with mines and other manufacturing facilities, for example, that you would find at CAMECO in Port Hope, and the activity around there, the Hitachi plant. There's, I believe, about 40 different sites that are covered by that plan in the province.

MEMBER DEMETER: Just to push that out a little bit further, if there was an incident with an industrial radiography source that may be in the community that may be at risk because it didn't -- is that included to that level? Is that type of planning included in that level of incident for a potential hazardous industrial source that hasn't gone back, hasn't been re-shielded, and a potential source of...

MR. NODWELL: Dave Nodwell, for the record.

The other radiological implementing plan deals with the provincial response as would be required at one of these facilities, Hamilton, Kingston, CAMECO, and what have you.

The facility itself, in conjunction with local municipalities, would also have some capability and some responsibility for that planning.

I know we had staff down at the McMaster facility not too long ago. They in fact had an exercise that engaged local municipalities. At that time, the scenario that was utilized didn't require provincial assistance, but we were visiting as a part of that for our own education and our own purposes.

Essentially, the ultimate goal with this implementing plan is to protect the public from ionizing radiation. It would be to prevent any form of deterministic effects to minimize any potentials to caustic effects, so if that entailed moving people, sheltering employees or an appropriate protective action, the province would be ensuring that takes place, regardless of where the location is.

MEMBER DEMETER: Thank you.

THE PRESIDENT: Thank you.

Ms Velshi.

MEMBER VELSHI: Thank you.

Just a couple of points of clarification before I get into my question.

On the implementing plans that you said have been approved for the Pickering-Bruce areas, did the appropriate licensees and CNSC staff review those implementing plans before they got approved?

MR. NODWELL: Dave Nodwell, for the record.

Absolutely, yes. There was a very detailed -- approximately a four-week consultation period with all members of the Nuclear Emergency Management Coordinating Committee, so that includes -- all of the relevant municipalities, the facilities, Health Canada, CNSC staff were all very engaged. I don't remember the precise number of comments. Overall, there were approximately 180 comments that came back from members of any MCC, and I know many of those came from CNSC staff, as well as Health Canada staff. Yes, so we did certainly have input from all of those different organizations that are named in the implementing plans as a responding organization.

MEMBER VELSHI: Thank you.

The second one, a quick one again, was on this technical assessment that's under way. Did the independent advisory group suggest that you should also be

looking at a scenario of a multi-unit event without any mitigation measures being taken?

MR. NODWELL: Dave Nodwell, for the record.

We're just looking that up. I'm not sure that they did formally make that recommendation, although I think that it would be a part of that intent. We're just reviewing it in detail, and I'd be pleased to provide you with a more definitive answer to that question.

MEMBER VELSHI: Okay. I guess where I was really going to with that question is when you're doing this technical assessment, are you going to be revisiting the source term that you use for the assessment?

MR. NODWELL: Yes. Dave Nodwell, for the record.

Reviewing the source term will be a big part of that, so we will be looking at different accident scenarios. This process would be undertaken with the support of CNSC staff and Health Canada as well, we'd like to have them at that table for that discussion, but we would be looking at different accident scenarios and a source term that would be associated with those accident scenarios.

MEMBER VELSHI: Thank you.

Now I get to my question. The new zones

that you have identified, or the redefined zones, how do they compare with international practices? If there are differences, how do you justify those and communicate those to the public?

MR. NODWELL: Dave Nodwell, for the record.

In terms of internationally, it's a difficult question, because they range considerably within Europe, as an example, or in different areas of the world.

I think it's important to note as well that it's an important distinction in terms of the technology that's being used, in terms of the CANDU technology versus the light water/boiling water that you find in other locations.

The United States, for example, based on an assessment of their facilities, are keeping it at 10 miles or 16 kilometres for their detailed planning zone, if you will.

Based on the assessments of the CANDU, the work that has been undertaken we're very comfortable with the 10-kilometre (sic) detailed planning zone, and I spoke to that in a little more detail in terms of reaching the threshold for evacuation at eight kilometres utilizing the 50 mSv versus 100 mSv.

So, based on that assessment, we're

comfortable with those sizes and, obviously, the technical study will inform that a little bit more.

But it's hard to go out internationally and look at an average, if you will, of what's out there and say that, you know, makes sense or it doesn't make sense. I think we are better off making that deliberation based on an analysis -- a scientific analysis of the CANDU facilities that are in question.

MEMBER VELSHI: Thank you. So, as a resident of Toronto, as you know, I get all kinds of media releases on why the Pickering plant evacuation zone area should be different and how it doesn't compare favourably internationally.

And I guess my question in anticipation of Part 2 is, how do you communicate that based on solid analysis, good science here is why what we have is robust and safe and why what's being proposed isn't the right way to go?

And I'm getting really more on the communication and building trust and confidence that this is a robust plan that really does take in best practice in consideration?

MR. NODWELL: Dave Nodwell, for the record.

That is an excellent question and I think

it's one that we struggle with on a daily basis.

I think in part it's been important for us to get out and meet with municipalities, with elected officials, with municipal staff and so on to go over these kinds of things and to have these kinds of discussions. I think it's really important from the standpoint of alleviating potential concern that they might have, or finding out what the source of their concern is.

It's a very difficult undertaking, given some of the publicity that you see on the far end of the spectrum. And, you know, there was a report not too long ago that was looking at 26,000 cancers and, you know, 50 per cent mortality of those with cancer and so on, which generates in my mind a significant amount of fear related to the technology that's being used and I think a lack of understanding about the technology that's being used.

To communicate that effectively I think is very, very challenging. I don't have the solution to that. I think that it's an issue that goes beyond the province. I think that it's an issue that ultimately would be the responsibility of ourselves, but in conjunction with the Commission, in conjunction with the facilities to be able to communicate on a consistent and regular basis to the public in terms of the safety of the technology and more definitive and accurate descriptions of the actual hazard.

So, it's a big issue and we'll certainly see that -- you know, we'll see a large disparate kind of opinions coming up in hearings to come.

MEMBER VELSHI: Staff, any comments on how can this be addressed in a more proactive way?

MR. FRAPPIER: Gerry Frappier, for the record.

I think, as was mentioned, it is a very difficult problem. I think that, as was mentioned, getting involved with other elected municipal personnel who are in a position of authority, but also in a position of being close to the public is an important thing.

I think the public consultations and the whole emphasis on transparency I think has had a lot of positive effect. It makes the public understand that they can interact and gives them opportunities to interact.

As Mr. Nodwell was saying, as far as issues of fake science, if you like, or at least exaggerated science and that, that has been very, very difficult to put in a bottle. There are things that are clearly not true, but still end up getting talked about over and over again and that generates a lot of fear and what exactly can be done of that is a little bit more challenging.

With respect to the preparations for

emergency planning itself, I'd ask Kathleen if she has any other comments to make.

MS HEPPELL-MASYS: On the approach that has been taken using more of a technical approach, this is -- Kathleen Heppell-Masys, for the record -- this is a trend that we see since post-Fukushima where we went from more of a focus of a technical approach to a likelihood approach.

And so, you're seeing the international guidance taking that approach and the planned PERNP has been the new one, has been reviewed with that in mind starting with a model for one of the plant -- the OPG plant using that approach.

So, the recommendations as we had done, as staff as well, is encouraging the province to further consider that approach with other plants as well.

So, this is -- the work is heading in the right direction. Definitely the public consultation that has taken place, the public process has been very engaging and, as well, echoed with the advisory panel as well that has taken place and there was a lot of participation there as well.

So, we were very pleased to see the province taking that approach. And, of course, we will collectively need to increase the awareness on the

emergency preparedness, and that's a collective approach.

Did you want to add anything, Richard?

Thank you.

MEMBER VELSHI: Sorry. Just to follow-up on that. If I take this Clean Air Alliance Report, I mean, that's the one I'm talking about, where is -- I mean, I haven't seen anyone respond in a scientific, factual, technical manner.

Is that something the province does, the CNSC with its mandate of disseminating scientific knowledge, is it Health Canada, I mean, or is it a joint responsibility? And I'm just thinking of it from a perspective of a member of the public, where do I get information that tells me, here's a different perspective to this issue?

MR. FRAPPIER: Gerry Frappier, for the record.

So, certainly staff has looked at that report and have a lot of both statements that are ready to go to the public, if that was deemed necessary. I'd suggest that industry has a major part in that as well as far as ensuring that there is a proper response, and I would expect that the upcoming hearings will have a role to play.

I think from a communications perspective

there's always a bit of a challenge as to how much, I think they call it in the industry, how much legs do they have with that story sort of thing.

So, we're certainly monitoring how much pick-up there is to that story and that report and, based on that, a decision can be made as to whether it's appropriate, or what level of importance would be put on trying to nullify some of the clearly erroneous assumptions that they made and science that they've used.

THE PRESIDENT: Thank you. Dr. Lacroix?

MEMBER LACROIX: Well, Mr. Morton and Mr. Nodwell, thank you very much for this presentation. That's an awful lot of information to absorb and see.

My question is the following, is that, and correct me if I'm wrong, but it seems to me that the emergency management action focused essentially on major accidents, on major releases. What about minor incidents that could eventually lead to a serious situation? That's the first part of my question.

And the second part of my question is that, you've shown us new planning zones and I would like to know what are the similarities and the differences for this contingency zone for Bruce Power, for Pickering and for Darlington, and what are the consequences of an emergency planning for these zones?

MR. NODWELL: Thank you for that. Dave Nodwell, for the record.

I think I'll deal with the first part in terms of small incidents and my understanding was potentially escalating incidents leading up to something bigger.

So, the concept of operations essentially has a very, very robust and detailed notification criteria from the facility. I won't go into the details of it, it's in the plan, but starting with a reportable event.

So, that would be something that there is no imminent risk to the public. It could be something that resulted in a number of fire activity, for example, and people off-site might hear sirens and see fire trucks and be curious and so on. So, that kind of thing would qualify as a reportable event.

So, when that notification comes in to the province, and it's required to come in to the province within 15 minutes of categorization, so very rigorous parameters around that. We, in turn, have 15 minutes to decide on an appropriate level of off-site response and it depends on the notification, so, it would be appropriately escalated to the response.

Or if we had a reportable, we would be routine monitoring or enhanced monitoring. We might bring

in some additional staff, we would consult with our chief scientist, for example, Laurie would reach out to the facility to get further information.

Similarly, if we move into the enhanced monitoring, we're going to start bringing additional people into the Provincial Emergency Operations Centre, we'd be starting to activate that centre, including the science section who are going to then be monitoring all of the plant parameters that are coming out of the facility in question.

So, they'll be monitoring that very closely utilizing the new URI system, or the Unified Rascal Interface where we're able to get all of that data and monitor it.

If things appear to be escalating from there or deteriorating from there, we would certainly be taking the appropriate response activities to that in terms of manning the PEOC, providing appropriate public alerting and public messaging.

And really it's all outlined in the PERNP in terms of at this level this is what happens, this is what the province does, this is what the municipality does.

So, we're in a very good position to be able to monitor things and ensure that, if it is escalating, that we are prepared to deal with it and we are

prepared to deal with appropriate protective actions.

I'm not sure if I understood the full extent of the question related to the contingency planning zone. I think you are asking if there are differences between the Bruce, Pickering, Darlington.

MEMBER LACROIX: Exactly. Exactly.

MR. NODWELL: Well, there are differences, certainly I mean the 10 to 20-kilometre area around Pickering is clearly very different from 10 to 20-kilometres around Bruce Power.

Bruce Power, of course, a very small population that would be impacted, significant consequences for agriculture, it's a very large agricultural area.

Pickering, however, to look at that, we're looking at a more dense population that needs to be dealt with, certainly some agriculture, but not to the extent that you would find around the Bruce Power plant. My apologies to any Durham farmers who may have heard me.

So, there are those kinds of differences that would have to be considered.

As I mentioned, the contingency planning zone, to a large extent, would be dealing with the potential of hot spots. So, protective actions would be different perhaps if this was in a townhouse development, versus the middle of a farmer's field would be dealt with

differently.

So, we're familiar with those differences and that would be accounted for I think in our response actions.

MEMBER LACROIX: Thank you.

THE PRESIDENT: Ms Penney?

MEMBER PENNEY: Slide 26 about transportation management evacuation planning going to that densely populated area around Pickering, but understanding that you would only be evacuating out to 10 kilometres; is that what I understand?

I guess, let me finish the question is, you indicated that the MTO will be coming out with those evacuation plans, they're not available yet. So, my question really is about, you know, how many people, where do you evacuate and when will that plan be available for Pickering?

MR. NODWELL: So, there I guess two things that I would -- I'm sorry, Dave Nodwell, for the record.

There are two things that I would reference here in terms of an evacuation if it was to happen this afternoon.

I think the first is that there have been very detailed emergency timer estimates that have been conducted for the Pickering facility. I don't have them in

front of me to speak to the specific of it, but I know based on that work we're comfortable that we would be able to move appropriate people out in order to be able to protect them.

Essentially, MTO will be working on these plans, but there are existing traffic management plans in place that have been developed in conjunction with Durham Regional Police, the Ministry of Transportation, Ontario Provincial Police. So, they've all been at the table for many years looking at this planning and developing those procedures. So, we would be in a position to be able to move people out.

I should mention as well that it's an all-routes-out approach that's taken. People would largely be evacuating on their own accord with packing up their vehicle with the dog and the cat and the kids and moving out.

The municipality, Durham Region in particular, has very detailed evacuation plans and I know that they will be available at the Day 2 hearings to speak in more detail about that, but they're in a position where they're able to deal with the vulnerable residents, those without transportation and that kind of thing, to ensure that they're able to move all of those people out.

There was reference I believe in your

question as well to the 10-kilometre piece and I think that's something that I'd like to clarify, because that is a planning area, it's not necessarily a response area. Our response area will be where the ionizing radiation is projected to go, whether if it's 12 kilometres or 15 kilometres.

The 10 kilometres is a nominal value as well, it's not that arbitrary circle that you'll see on a map. If you look at the map, it actually follows roads. So, it's kind of a jagged kind of a thing. But what it means is that many parts of the detailed planning zone are, in fact, out as far as 14 or 15 kilometres because we're utilizing those major roadways. So, it's not cut off at 10, it often goes out to that level.

Where there were the necessity of protective actions in the contingency planning zone, we would be able to implement those protective actions and that's why we have that zone. It talks about, you know, exactly how do we go about if we had to move a portion of the public out of a particular area, how we would be able to notify them, public alerting, how we would manage that whole piece is covered by that plan.

Hopefully that answers your question.
I've given you a very broad answer.

MS PENNEY: Thank you.

THE PRESIDENT: Mr. Berube?

MEMBER BERUBE: I have a question pertaining, again, more the systemic look at this thing as we're implementing NERP and, in particular, looking at the operational plans, moving forward with those at this point. I know that they're under consideration in some cases.

But what I want to understand is, how do you intend to do implementation on PERNP in terms of integrating that into localized drills. Right now you've got existing localized drills not based on the PERNP structure, however, you're moving towards the PERNP structure that's my correct assumption on this.

Are you intending to do this in a phased manner in order to get training to the individuals in this area, or are you integrating some of those drills into your training scenarios now so that the learning lessons can be accumulated and you can actually get feedback and work that into your operational planning?

MR. NODWELL: Thank you. Dave Nodwell, for the record.

Yeah, that's a very important part of it. As the implementing plans get into place, as supporting organizations, municipalities and other ministries develop their own supporting plans to this, clearly education is an important part of that and the drills and exercises

component is a very important part of that.

I just had the opportunity yesterday to review a draft exercise program with staff that we will be briefing up on that takes a look at how we go about doing the appropriate level of drills and exercises and get the appropriate value out of that, based on exercising the features of a new PERNP.

The ERAMG, as well I mentioned the fact that they're looking at workshops and TTX this year and that's based on a re-write of their procedures based on the new plan, so that, you know, we can introduce as much of that as possible.

But it is a process of education, of practising, of revising and practising again. So, that's what's being implemented in terms of the new plan.

MEMBER BERUBE: Just as a follow-up to that. Of course, this is an extended process and learning process, I understand that. When do you expect that you're going to have full implementation in place?

MR. NODWELL: Dave Nodwell, for the record.

We're looking at approximately 12 months to bring supporting plans up to speed in terms of conforming with the PERNP and the implementing plans. Obviously, we're looking at continued drills and exercises

that we'd be able to roll in the new concepts and we'd be able to challenge, for example, our command section with some contingency planning area questions and that kind of thing.

The other side to that, I kind of struggled, quite frankly, with the idea that it's all done and put away, we're finished. And I'm not being facetious, but I think my response is, well, we're never going to be there because we are always learning lessons that change things.

Mike spoke earlier on to many of the changes that are happening in emergency management. A lot of that work is going to impact the PERNP down the road, it's going to impact our own operation at the Provincial Emergency Operations Centre and how we look at things and how we do things, so -- and this is an ongoing process where we're lessons learned from exercises. We may learn lessons from a flooding evacuation, which we do quite regularly, that might have application to a nuclear evacuation hypothetically that could be incorporated or re-visited and put into a plan or a procedure, or put into an updated PERNP.

So, in that sense, we're never there because it's a moving document that is being worked on literally all the time.

MEMBER BERUBE: Thank you for that.

THE PRESIDENT: Thank you.

Dr. Demeter...?

MEMBER DEMETER: Thank you.

I couldn't find the details, but you had alluded to something that was going to happen Friday and I suspect it was something to do with a communication strategy. Maybe you could provide some more detail on what that is and what will change.

MR. MORTON: Thank you for that question. Mike Morton, for the record.

The event that was being referenced for Friday is the national launch of wireless public alerting, which is an additional capacity within the national public alerting system that allows emergency management organizations across Canada to issue immediate alerts and information to the public where protective actions need to be taken. That could be for a nuclear emergency, but it is certainly an all hazards program.

For example, if there were a train derailment, a chemical release, and an evacuation was required, we can activate alerting in the geographic area that is affected, which under guidance from the CRTC there is a requirement for all broadcasters of all types, radio, television, satellite, to interrupt their broadcast and

advise the public of the messaging that is being sent from the Provincial Emergency Operations Centre.

On Friday that same system is being extended to our phones and there has been a strong public education campaign that has just launched last week, a number of media advisories and interviews being done over the last days, particularly in the Toronto area and across Ontario, to inform all Ontarians, all Canadians that this is coming into effect and that after Friday if one of these alerts is issued, not only will it go to the broadcasters but there will be an intrusive alert on their phone. This is something that is automatic. It's not an opt-in or something you sign up for. This goes right to your phone and it tells people again in that geographic area what they need to do.

So again, it is something that will significantly supplement our alerting in general and something that will be of benefit should there be a nuclear event as well.

MEMBER DEMETER: Thank you for that.

THE PRESIDENT: So are you now plugged in? If somebody had to send a message, you presumably are the message people, so are you going to -- when is the first time you are going to experiment with this around a nuclear facility?

MR. MORTON: Thank you. Mike Morton, for the record.

The system has been in place for several years in terms of broadcast intrusive alerts and those are administered through the Provincial Emergency Operations Centre. In Ontario Environment Canada and the OPP also have the capability to initiate alerts. So in the case of weather it would be Environment Canada, things like tornado warnings; for the OPP it's the Amber Alert Program.

If there was a requirement to do alerting for a nuclear incident, that would be driven out of the Provincial Emergency Operations Centre. We do very regular drills internally with our staff and we also test the system live twice a year. Our next public test is coming up in early May and that will be the first time that not only the broadcast aspect is tested but also the wireless public alerting and we will be doing a fair bit of media outreach and engagement ahead of that test, again, early May.

THE PRESIDENT: So it's going to be you who are actually testing the wireless? I remember -- some of us still remember the blackout and the emergency wireless, so-called emergency wireless system not working or overwhelmed.

MR. MORTON: Certainly during the blackout

there was significant demand on the cellular network and we did utilize a system of priority access dialling that was in place at that time and that allowed us to sustain public safety communications and telecommunications. The public alerting system will be systemwide during our test in Ontario. It will be activated out of the Provincial Emergency Operations Centre and it will go to all enabled phones across Ontario. And anyone looking to learn a little bit more about that and how that will work can go to alertready.ca.

THE PRESIDENT: Thank you.

Ms Velshi...?

MEMBER VELSHI: Thank you.

Mr. Nodwell, before I forget I do want to take you up on your offer to visit the PEOC again. So if you can coordinate that with the Secretariat preferably before Part 2 of the Pickering hearing, that would be good.

I have a question/comment on Slide 5, please, and it's the slide titled "Drivers of Change in Emergency Management". I know we have been told a few times that nuclear is only one element of emergency management in Ontario, but I was surprised that there was no mention of the Fukushima event as one of the drivers of change because there were a lot of learnings around emergency management and particularly, as the President

calls it, being prepared for a doomsday scenario. So given that you probably use the slides for your communication with the public and the municipalities, can you comment on why it's not there at all?

MR. NODWELL: Dave Nodwell, for the record.

It's an interesting question and certainly in previous slide decks that we have presented around the province, particularly with the focus on nuclear planning, Fukushima is one of those key drivers for the province. It has also driven a number of other initiatives such as the CSA N1600 and so forth that have had huge impacts on our plan. So very clearly it is something that has obviously been looked at very, very closely. It has been discussed in the planning basis discussion paper and has been a significant driver.

I think -- and Mr. Morton may have some further comments on this, but there is a lot that is happening that is identified on that slide in terms of emergency management in general that is impacting the work that we do and the planning that we are doing as we move forward on this. So this is very broad-based I would say, but certainly Fukushima has been reflected in the work that we have been doing for the past number of years and documents that we have done.

MEMBER VELSHI: Thank you. And I wasn't questioning that. I just think that learnings from Fukushima, I mean you do talk about major disasters, but there was absolutely no mention and one of the biggest takeaways is being prepared for the totally unanticipated and also the recovery part. Again, something for your consideration. Thank you.

THE PRESIDENT: Thank you.

Dr. Lacroix...?

MEMBER LACROIX: Thank you.

One of the recommendations of the Advisory Group to PNERP was to conduct more detailed technical assessments. What is it exactly that you mean by technical assessments? And I would like a reply from the CNSC staff.

MR. NODWELL: Dave Nodwell, for the record.

So the technical work that the Advisory Group spoke to is the technical study that we are currently undertaking that will be taking a look at multiple accidents, assessing those accidents based on 365 days of meteorological data. I spoke to the local topographical features, radioactive iodine, water quality. This technical study will be looking at that and that is what is being referred to in the Advisory Group Report.

THE PRESIDENT: Thank you.

MEMBER LACROIX: And the response, the reply from CNSC?

THE PRESIDENT: Sorry.

MR. FRAPPIER: Gerry Frappier, for the record, and then I will ask Kathleen to add to this.

First of all, there is a lot of technical studies that are going on that are not these ones, if you like, so there are certainly technical standards as far as -- or technical studies as far as nuclear safety, if you like, that are ongoing. This was particularly earmarked for technical studies associated with emergency management and in particular having a better understanding of what are some of the potentials in an accident scenario as to what ever did happen at the station, it released a certain amount of radioactivity, where does it go, what do you do with that. So CNSC is certainly going to be supportive of whatever process is used.

And perhaps on that I would ask Kathleen Heppell-Masys if she could add to that.

MS HEPPELL-MASYS: As I mentioned a little earlier, previous work in the emergency management was done more on the likelihood and now we are moving more towards the impact base. So the scenarios that will include more the various kinds of potential accidents driving to impacts, with various considerations such as weather, would

be of benefit to have a better understanding or perspectives on the kinds of scenarios. But, mind you, the PNERP was based on a scenario that was various -- like a 24 basis without intervention scenario with multi-units. So that was like how far can this go. So now you just need to bring it back in a little bit to see what kind of range would you face. I believe that's the nature of the Panel's comments. And CNSC had also commented in that regard as well, so we are aligned in terms of the next steps moving forward. Thank you.

MEMBER LACROIX: Thank you.

THE PRESIDENT: Thank you.

Ms Penney...?

MEMBER PENNEY: With reference to Slide 8, it talks about collaboration with the NGO Alliance of Ontario. So a couple of questions. What does that collaboration look like. Does your advisory group include any NGOs? Does it include the, you know -- or has the Clean Air Alliance provided you with any feedback during your consultations, so just around the NGO collaboration that you have ongoing?

MR. MORTON: Thank you. Mike Morton, for the record.

The NGO Alliance is a fairly new organization within Ontario. It is comprised of

organizations that provide humanitarian assistance during times of emergency and it's a group that has reached out to our organization to establish further collaboration and professionalization of processes.

We are working with them closely right now to look at ways in which NGOs can become more engaged, particularly in our Provincial Emergency Response Plan, our All Hazards Plan, and particularly in the areas that were a focus on Slide 5, around relief efforts, humanitarian aid provision and early recovery, which we've seen as particular areas of concern from some of the large-scale events in the United States and in Canada, so not only Hurricane Sandy affecting New York but also the wildfires and the floods that occurred over the last few years in Alberta, where a lot of the response effort, the bulk of the response effort isn't necessarily on that front-end lifesaving phase but on the relief and community restoration phase, everything from the cleaning of debris to the provision of emergency food and water.

And our action plan announced by the government is very focused on those areas, which if you look at an event like the 2013 Ice Storm that affected many of the Greater Toronto and Hamilton area municipalities, those were really the needs, the ability to move large amounts of food, water, even financial aid to people in

very quick order during challenging weather circumstances. That is the primary effort right now and of course our nuclear processes and consultations through the NEMCC are also able to access that group to ensure that on areas such as sheltering, evacuation, we are able to fully leverage all of those partners. So we are very encouraged by that cooperation within the NGO community and looking to make them a key part of our planning as we move forward.

MEMBER PENNEY: My apologies, a different group of NGOs. So environmental non-government organization, is there an overall group in Ontario that you would deal with or do you deal with each group individually and have you involved them in your advisory committee and did you get feedback from them during consultation?

MR. NODWELL: Dave Nodwell, for the record.

We did receive feedback through the public consultation from numerous organizations. I can't speak to which particular organizations provided comments. I was actually removed, as was my staff, removed from that consultation process so as not to be perceived as unduly influencing the work of the advisory group. So we were very much hands-off on that.

We do and have met with some organizations on an individual basis on request. We recently provided a

PNERP briefing with the Canadian Environmental Law Association as well as Greenpeace. That occurred I believe about two and a half weeks ago. However, there is not a formal process for those organizations. I think in part that was some of the rationale behind formalizing the review process in the actual PNERP so that there would be that public opportunity for engagement and to provide input into the future iterations of the plan.

MEMBER PENNEY: Thank you.

One last question. Makeup of your advisory committee?

MR. NODWELL: Dave Nodwell, for the record. The advisory group that provided recommendations to the Minister is the one that you are referring to?

MEMBER PENNEY: I think that's the group. The advisory group, not the coordinating group.

MR. NODWELL: Okay. Okay, fair enough. Do we have the -- yes, thank you.

So the members of the advisory group. It was chaired by Dr. François Lemay from International Safety Research. We had Dr. Chris Dijkens, who is an Emergency Preparedness Response Expert with the Netherlands and very active with the International Atomic Energy Agency; we had Professor David Etkin, who is a Professor at York University in Disaster and Emergency Management, very well

known for his capabilities there; Dr. David Novog is a Professor in the Department of Engineering Physics at McMaster; and Dr. Akira Tokuhiko, who is the Dean and Professor of the Faculty of Energy Studies and Nuclear Science at the University of Ontario Institute of Technology. So that was the group that reviewed the public consultations and developed the report that was submitted to the Minister.

MEMBER PENNEY: Thank you.

THE PRESIDENT: Mr. Berube...?

Dr. Demeter...? Ms Velshi...?

MEMBER VELSHI: A question on your Slide 24 on funding for additional planning costs, where there is a statement:

"The Province has not allocated any additional funds for Designated Municipalities."

Is that a risk to timely implementation of the implementing plans?

MR. NODWELL: Dave Nodwell, for the record.

I wouldn't view that as a risk. I think what this particular section 3.2.1 deals with is to provide a mechanism to ensure that all of those organizations have the appropriate level of funding required to maintain their

responsibility. So if this was flagged as a concern by a particular municipality, there is that mechanism to have that discussion with the municipality, with ourselves and with the facilities to ensure that they do have the resources that they need.

MEMBER VELSHI: Thank you.

And my last question is: Have you been in touch with your counterparts in New Brunswick for any learnings for them for the Point Lepreau station, particularly around public consultation and source term used for assessments?

MR. NODWELL: Dave Nodwell, for the record.

Yes, we are in contact with Point Lepreau as well as the New Brunswick EMO folks who are involved in the planning on a fairly regular basis. Also, we have been down for a couple of their exercises, but we have plans to go down in the fall of this year where they are conducting a major recovery exercise which we find would be very, very valuable to attend. So we do have regular interactions with the folks from New Brunswick and Point Lepreau.

THE PRESIDENT: Thank you.

Dr. Lacroix...?

First of all, I would like to thank you for this presentation and in fact I think a lot of good

work has been done and more to be done and, you know, you thought this is going to be a done deal, not when we are around.

--- Laughter / Rires

THE PRESIDENT: You are going to appear in front of us every time there is a nuclear hearing because emergency planning will always be a part of the interest.

So on that part, you mentioned that the implementing action plan will be published I assume very soon. Now, very soon enough for Part 2 for both Bruce and -- that means very, very soon, because Part 2 Bruce is in May, as you know. So can you give us -- you couldn't give us a real date, could you?

MR. NODWELL: Well, Dave Nodwell, for the record.

I can't give you a precise date because I would be wrong, but what I can tell you is that the plans are currently being made assessable and being translated. The time for turnaround for that is I believe later this week, early next week that that work is done, a couple of days to upload it to the website, so the plan is before the end of April.

THE PRESIDENT: That's good. Thank you. Thank you very much.

And I understand you are staying for our

public hearing from Pickering just in case there are questions?

MR. NODWELL: I would be more than pleased to stick around for that.

THE PRESIDENT: Thank you. Thank you very much.

We are going to take a break and come back at 11:15. Thank you.

MR. LEBLANC: So for the record, this concludes the public meeting of the Commission. Thank you.

--- Whereupon the meeting concluded at 10:57 a.m. /

La réunion se termine à 10 h 57