

**Canadian Nuclear  
Safety Commission**

**Commission canadienne de  
sûreté nucléaire**

**Public meeting**

**Réunion publique**

**October 24<sup>th</sup>, 2012**

**Le 24 octobre 2012**

Public Hearing Room  
14<sup>th</sup> floor  
280 Slater Street  
Ottawa, Ontario

Salle d'audiences publiques  
14<sup>e</sup> étage  
280, rue Slater  
Ottawa (Ontario)

**Commission Members present**

**Commissaires présents**

Dr. Michael Binder  
Dr. Moyra McDill  
Mr. Dan Tolgyesi  
Ms. Rumina Velshi  
Mr. André Harvey

M. Michael Binder  
Mme Moyra McDill  
M. Dan Tolgyesi  
Mme Rumina Velshi  
M. André Harvey

**Secretary:**

**Secrétaire:**

Mr. Marc Leblanc

M. Marc Leblanc

**Senior General Counsel:**

**Avocat général principal :**

Mr. Jacques Lavoie

M. Jacques Lavoie

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Ottawa, Ontario

--- Upon commencing at 6:00 p.m./

**1. 12-M51**

**Opening Remarks**

**MR. LEBLANC:** Well it's almost bonsoir, mesdames et messieurs. Bienvenue à la réunion publique de la Commission canadienne de sûreté nucléaire. We've already informed the participants this morning about a few items so I'll be very fast.

So we have simultaneous translation, we would ask you to keep the pace of speech relatively slow so that the translators can keep up. Les appareils de traduction sont disponibles à la réception. La version française au poste 2, English is on channel 1. I would ask that you identify yourself before speaking for the purposes of the transcripts.

And the proceeding is being video webcast and will be available or archived for a three-month period. Please silence your cell phone and other electronic devices. And Mr. Binder, président et premier dirigeant de la CCSN va présider la réunion publique d'aujourd'hui, président Binder.

**THE CHAIRMAN:** Merci Marc. Good afternoon and welcome to the meeting of the Canadian Nuclear Safety Commission. Mon nom est Michael Binder, je suis le président de la Commission canadienne de sûreté nucléaire et je vous souhaite la bienvenue and welcome to all of you joining us via webcast, teleconference or videoconference.

I'd like to begin by introducing the Members of the Commission. On my right, Dr. Moyra McDill and Mr. Dan Tolgyesi. On my left, Ms. Rumina Velshi and Mr. André Harvey. We have heard from our secretary Mr. Marc Leblanc and we also have with us here today Mr. Jacques Lavoie, General Counsel to the Commission.

**MR. LEBLANC:** The *Nuclear Safety and Control Act* authorizes the Commission to hold meetings for the conduct of its affairs. Please refer to Agenda dated October 22<sup>nd</sup> for the complete list of items to be presented today in addition to the written documents reviewed by the Commission for today's meeting.

CNSC staff and licensees will have -- and other participants will have the opportunity to make presentation and Commission Members will be afforded an opportunity to ask questions on the items before us.

**THE CHAIRMAN:** Okay, with this information, I would like now to call for the adoption of the Agenda by the Commission Members as outlined in CMD 12-M52.B.

Let's see, do I have concurrence?

Okay, for the record, the Agenda is adopted.

**2. 12-M52.B**

**Adoption of Agenda**

**THE CHAIRMAN:** We now move to approval of the Minutes of the Commission meeting held on September 13<sup>th</sup>, 2012. The minutes are outlined in Commission Member document CMD 12-M53.

Any comments, addition, deletion?

Okay, so for the record, the Minutes are adopted.

**3. 12-M53**

**Approval of Minutes of  
Commission Meeting held  
September 13, 2012**

**THE CHAIRMAN:** The first item on the agenda is an update on the public alerting system for Pickering city and the Durham Region. We will hear a presentation from Emergency Management Ontario and a presentation from the Durham regional -- Region Emergency Management Office.

So I understand that the first presentation will be from Emergency Management Ontario, as outlined in CMD 12-M58.1. And I understand that Mr. Kontra will make this presentation. Please proceed.

4. Update on an item from a previous Commission proceeding

4.1 Update on the Public Alerting System for Pickering City and The Durham Region

**12-M58.1**

**Oral presentation by  
Emergency Management Ontario**

**MR. KONTRA:** Merci M. le président. Bonsoir tout le monde. Tom Kontra from Emergency Management Ontario. I am here on behalf of Ms. Allison Stewart who unfortunately is somewhere over Canada in an airplane and not able to attend. I will proceed with the slides which at the moment I can't see on my screen. And if we can go to slide 2.

**MR. LEBLANC:** If you're watching us via

webcast, Mr. Kontra, there's about a 30-second lag between what you'll see, but we do have slide 2 in front of us so please proceed.

**MR. KONTRA:** Thank you very much. Slide 2 should say "context" and in December 2011, Emergency Management Ontario carried out a comprehensive review of designated communities' nuclear plans. And we assessed them with regards to conformity to the provincial nuclear emergency response plan.

And our last meeting in March, we reported on the detailed results of that review and shown that the designated communities have a strong nuclear emergency management program and all had some areas for improvement. And we will show some of that improvement in today's presentation.

Also at that meeting, we committed that in about six months, which is today's meeting, we would do a follow-up. Go to the next slide please, titled "introduction".

**MR. LEBLANC:** We're there.

**MR. KONTRA:** The *Emergency Management and Civil Protection Act*, or EMCPA 2006, stipulates that Ontario shall have an emergency response plan for nuclear facility emergencies. This is known as the provincial plan, the provincial nuclear emergency response plan.

The act further stipulates that designated municipalities have to prepare a plan to respond to off-site consequences of a nuclear emergency. These plans must conform to the provincial plan and are subject to approval by the minister. In practice of course, that means that EMO reviews those plans to ensure conformity.

The next slide please, under introduction. The provincial plan fulfills the provincial requirement for a plan and outlines detailed expectations for both provincial and municipal nuclear emergency management. In fact, that plan is quite a comprehensive one, as you'll recall from our previous discussions with eight volumes, one of which is dedicated to Pickering, which is our subject at hand.

The provincial authority under the EMCPA is to ensure that the designated municipalities' plans conform to our provincial plan. It is incumbent on each municipality to ensure that their plan can be fully implemented.

Go to next slide please. Look at the status as of October 2012. A letter from our ADM in chief was sent to each designated community outlining the results of their plan review.

In response to the September 30 deadline, EMO has received updated nuclear emergency plans from

those designated communities except for Kincardine and Saugeen Shores who requested a delay pending the completion of the Huron Challenge exercise, which took place last week. EMO is presently undertaking the detailed review of each of those plans.

Next slide please. The following slides will show the update from our last report. And we'll talk first with the designated municipalities followed by host municipalities.

Under designated, Durham Region overall is in conformity with the penur (phonetic). And obviously, the subject today later will be the public alerting discussion.

The City of Toronto, their outstanding issues, which were the precautionary and protective measures and some training, have now been addressed. And the public alerting touches on it later. Deep River and Laurentian Health, their outdoor public alerting public requirements in KI distribution remain outstanding. The outstanding issues here are primarily rewrite and proper wording to thick of the pinner, in other words, to be conform. The other outstanding issues have been addressed.

Next slide please.

Still with designated municipalities. The town of Ahmerstburg outstanding issues, the planning data

training and exercises and facilities have all been addressed. And the municipality of Kincardine as I've already mentioned will submit soon after the exercise that was just completed last week.

Next slide will take us to (inaudible) municipalities. The city of Peterborough requires minor adjustments only and terminology. The city of Toronto, the outstanding issues have now been addressed. Those are precautionary and protective measures and training and public alerting. Essex County: the outstanding issues of training and exercises have now been addressed. The city of Windsor is complete and the town of Saugeen Shores also to follow up with their update having completed the exercise last week.

We go to the next slide; we'll talk specifically about Durham Public Alerting and the three kilometres zone. Darlington indoor and outdoor; Darlington has been formally advised by us that the Durham region and Durham region that they meet the requirements of the PNERP for both indoor and outdoor in the Darlington area. Pickering; the indoor testing of the public alerting system demonstrates conformity with the PNERP requirements. The Pickering outdoor, which had been the outstanding issue, I'm happy to report that when Durham region comes to the table next, they will be able to give

you some details, but they have approval and I believe they will tell us that they have started with the installation of additional sirens to meet the requirements.

Next slide: ten kilometres public alerting. We have established a ten kilometres working group. We are using representatives from Ontario Power Generation, Durham Region, Toronto and ourselves. The group has drafted an RFP to seek options for a public alerting system that meets the PNERP requirements for public alerting and the three to ten kilometres radius of the Pickering and Darlington facilities. The request for proposal is pending final review and I hope will be issued before our next opportunity to meet.

Next slide please. The way forward, of course, is the review of the municipal nuclear emergency plans which we expect to complete by the end of this year, by the end of December. And on public alerting, we will remain in close contact with Durham region and Pickering as they continue with the installation process and on our side we will work diligently to complete the request for proposal and issue it for the three to ten kilometres alerting.

That completes my report Mr. President and I'm happy to take questions.

**THE CHAIRMAN:** Thank you very much. Before we open the floor for questioning I'd like to hear now from the Durham Regional Emergency Management Office and I understand that Mr. Cubitt will make the presentation.

Please proceed.

**Mr. CUBITT:** Thank you very much, my name is Gary Cubitt and I am the chief administrative officer for the Regional Municipality of Durham and as such, I am responsible for all staff and all service area responsibilities within the regional municipality, one of which is Durham Emergency Management, and I am please to be joined this evening with the director of emergency management, Ivan Ciuciura.

We are here today to provide a progress report on the installation of additional sirens in the Pickering three kilometres zone. To begin, allow me to do a very quick review of our situation in Durham, starting with our Darlington plant. As you heard in the province of Ontario presentation, our Darlington three kilometres zone is compliant with the provincial emergency standard for both indoor and outdoor alerting. Of importance to this evening's meeting is a very positive report we have to bring on Pickering. First, I'm very pleased to report that Pickering is now compliant with provincial indoor alerting standards and that is an accomplishment since our last

meeting and I'm pleased to be able to share that with you. Now it's important for us to note that we've have had a siren alerting system in place in Pickering for many years. However, due to such issues as the high ambient noise along the 401 corridor, this standard of the standard of province of Ontario with regards to decibel penetration has been a challenge to us. In addition, as you know, there have been some technical challenges associated with the equipment that needed study and resolution. And today, I am pleased to invite my colleague Ivan Ciuciura to provide some detailed comments on our significant positive progress.

**Mr. Ciuciura:** Ivan Ciuciura, director of emergency management. In March, I indicated we were expecting a report on the number and locations of additional sirens to bring here for the Pickering area and that was to be provided in April. At your meeting in August, I indicated that we did not receive that report because of a technical issue. The consultants identified a technical discrepancy in the sirens in Pickering, a significant one that required attention. The Pickering sirens were noted as putting out one hundred and ten decibels in previous testing. The normal output for this siren measured between one fourteen and one eighteen decibels. So clearly, a discrepancy and if we wanted to

proceed with one ten decibels, the consultant indicated that twenty six more sirens would be required, for a total of thirty-five. So clearly that just wouldn't fly and we had resolved that problem.

The problem was resolved, but it take several months throughout the summer to do so and five different testing sessions, including taking equipment out of storage and bench testing it at their location by the consultants. That testing indicated that the siren should be putting out one hundred and sixteen decibels, in that range. Another round of testing included sirens in Darlington and the sirens in Darlington do put out one sixteen, so why would the Pickering sirens putting out only one ten. So that was finally resolved by the consultants and the adjustments were made to the sirens and the now put out one sixteen decibels. So based on that we received their final report of the consultants on the twentieth of September and they indicated that eleven additional sirens should be put in.

So what have we been doing since then? We certainly have expedited and I think we indicated before we would expedite to the best of our abilities to get these sirens in. Council approval was required and to install the sirens and to single source the contract with a supplier and that approval was received on the tenth of

October. There is agreement with the City of Pickering on the locations of the sirens. OPD approved the pricing that was provided by ATI, the siren manufacturer, and that contract has been signed with the siren supplier. Well it's now in place. A contract for a utility locates needed the underground locates through whether there is telephone or sewer or gas lines, that type of thing, so each site has to have a locate's done, a contract has been signed and the company is proceeding with the locate as we speak.

Contract per site surveys: each site has to be surveyed, the land surveyed and that survey has to be recorded. They're standing by, so as soon as the locates are done and the site is good, those site surveys will be completed.

So, we're proceeding as fast as we can. We did have a delay, but I can assure you that we are on track and it's full speed ahead, from my point of view.

Mr. Cubitt will finish with a few extra comments on more sites.

**MR. CUBITT:** It's Gary Cubitt, for the record.

So, let me in by reviewing what we have in place in Pickering now. We currently have in Pickering nine sirens that are tested, in service and operating. We have the dialing system now in place that meets the

provincial standards and we have, of course, all the agreements with the media of La Som Song (phonetic) which facilitates the dissemination of any kind of provincial information or directions, should an emergency occur.

However, I recognize that, for the purpose of the meeting, tonight it's the sirens that is of the utmost significant importance and I would like to end with showing you a couple of slides.

This first slide shows you our current situation in the three-kilometer zone. All of the green are areas that meet the provincial compliance requirements for sound saturation right now. The red area are areas where the sirens may very well be heard, quite audibly, but it may not be 10 decibels over and above ambient noise, which is a major problem along the north part of that slide, which is the 401 corridor or it may not be a minimum of 70 db, in whatever location it may be.

So, the sound penetration must meet both criteria: it must be a minimum 70 db and it must be a minimum of 10 db over whatever the ambient noise is in the area. That is where the challenge is and has been.

We now have a model that we can show you what that exact same area will look like with the 11 new sirens in place. We are confident, as is the Province of Ontario, that that installation will result in meeting the

compliance requirements of the provincial legislation.

Again, we realize we have sirens there now, we have public alerting in place, sirens can be heard throughout the three-kilometer zone, but our challenge has been meeting the level of sound penetration required by the provincial legislation.

We are very pleased to be able to report that that remediation has happened and we are moving along to ensuring that a very high priority for the region of Durham, which is Safety Way we have in Pickering, is going to be met and that we are looking forward to having compliance.

**THE CHAIRMAN:** Thank you. It's not every day that, you know, we have good-news stories. So, thank you for that. It sounds like a good-news story, even though it's not installed yet. You didn't tell me when it will be installed by, so I'll open up to colleagues, but do you have a date to completion?

**MR. CUBITT:** I'm smiling because our project managers would like me to say at the end of January.

Mr. Ciuciura and I are very committed to having as much closure on this file as we can possibly bring you by the end of this year. So, we're hoping to have our sirens installed and operational by the end of

this year and that January will simply be for compliance testing purposes and so on.

Clearly, we realize that if we should have an early freeze or bad weather, or frost that could delay it, but our target is to bring closure to this file as quickly as we can.

**THE CHAIRMAN:** Thank you.

Let me start the question to Doctor McDill.

**DR. MCDILL:** Tell me about the two red strips down the center there. Are those neighbourhoods or red yards or ---

**MR. CUBITT:** The red strips are major roads. And so, what they show up is that they're noisy right on the road. It's not obvious in the evenings, but in the daytime, along those roads.

**DR. MCDILL:** Okay. You won't hear them in your car then, possibly.

**MR. CUBITT:** Possibly, you would not.

**DR. MCDILL:** But, if you happen to be ---

**MR. CUBITT:** But they're for people outside and it's not --- the roads that are showing are not major pedestrian corridors, more in the commercial areas.

**DR. MCDILL:** Okay. And staff, you're okay with that? If that happens?

**MR. RZENTKOWSKI:** Yes, we do agree because

the sound would be still there, just not at the level of 116 decibels. But at 100 decibels, it could be more than enough to be heard.

**THE CHAIRMAN:** But presumably, (inaudible) more agrees with this, which is the key to regulate the area on that.

**MR. KONTRA:** I can confirm that Mr. President.

**THE CHAIRMAN:** Doctor McDill? Okay? Mr. Tolgyesi?

**MEMBER TOLGYESI:** Merci, Monsieur le Président.

When you're saying that output was under 10 decibels, its output at the siren, so if I'm 100 feet or 500 feet from the siren, what's the sound there?

**UNIDENTIFIED SPEAKER:** The normal measurement or testing for sirens is --- there is a standard, it's 100 feet from the siren on axis with a microphone. And there's a way of also calculating it from the ground at 200 feet.

**MEMBER TOLGYESI:** So, when you are saying normal is 114 to 118, it's at ---

**UNIDENTIFIED SPEAKER:** That's at 100 feet.

**MEMBER TOLGYESI:** At 100 feet.

**THE CHAIRMAN:** So, I know this engineer is

dying to ask us a question. So, what was the root cause?

**MR. CUBITT:** Gary Cubitt, for the record.

Our understanding was that, in an attempt to meet the needs of Pickering to not have a high number of sirens, yet at the same time meet the penetration requirements, at one of the steps along the way, the engineers suggested that by lowering the frequency of the siren, it would increase the penetration of the sound. So, they did that. But in doing that, they had to change the output amplification of the siren.

So, down we go to 110 db. And it took the technicians some time to realize that that's what was at the root cause. It wasn't an equipment failure or it wasn't a faulty product. It was simply that the adjustment had been made in an output frequency which had a consequential impact on the amplification component of the sound and that hadn't been anticipated or found.

Once that was found out and the adjustments to the amplification were made, the sirens were performing back at their specified levels.

**THE CHAIRMAN:** I think they were calibrating it for dogs. Just a bit of humour here. Mr. Tolgyesi?

**MEMBER TOLGYESI:** This is for the first gentleman who doesn't see his slides. You're saying that

the City of Toronto public alerting is discussed later. When you say that, what you mean is discussed -- the plan is in the development or what?

**MR. KONTRA:** Thank you for that question. I discussed it on a later slide where we were talking about the 10 kilometers.

**THE CHAIRMAN:** M'hm.

**MR. KONTRA:** And that is still being looked at. That is the request for a proposal that we are talking about.

**THE CHAIRMAN:** And ---

**MR. KONTRA:** --- slide 9, that I addressed that.

**THE CHAIRMAN:** Yes. My last is on the Deep River Laurentian Hills. Is outdoor public alerting requirements and key, K-R(ph) distribution remains outstanding.

When you expect it will be completed?

**MR. KONTRA:** I have to recall when Mr. Cubitt, in our earnest desire to do it at the earliest opportunity. Again, we set the end of the year. Now, I'll argue whether it's calendar or fiscal, but we are diligently working with that community as well to ensure that the residents are safe.

**DR. MCDILL:** Question for EMO. Again on

slide 9 on public alerting in the 10-kilometer zone, any sense of timing for that and what it's striving for? And the second part is: are there any intra measures you're taking in lieu of not having a public alerting system available for this zone?

**MR. KONTRA:** The request for a proposal is completed in draft form. We're having to make sure that our procurement folks, our legal folks are happy with it. So I'm certainly hoping that we will be able to issue the request for a proposal before the end of this fiscal, and we don't have a real concept of time that it will take for that request to be completed because, of course, that'll be a part of the answer as to how quickly they can do that.

**MS. VELSHI:** So which brings me to the second part of my question because this could be yours.

**MR. KONTRA:** That's right. That's right. In the interim, well, not only in the interim, in total, the alerting responsibility remains with the designated municipalities, and so Laurentian Hills and that area do have a temporary means and the City of Toronto also has alternate means of alerting.

**MS. VELSHI:** Can Tom comment on what you have besides, you know, the media that you've discussed?

**MR. CIUCIURA:** We do have a telephone

dialing system that the priority is obviously would be the 3 kilometre zone in 15 minutes. We can't meet the rest of the 10 kilometre zone in 15 minutes, but we have all those sectors and numbers are in the system. So they will be -- that telephone dialing system is in place right now.

**THE CHAIRMAN:** Thank you. Mr. Harvey.

**MR. HARVEY:** Merci Monsieur le Président.

Once completed, when the system is completed, what has to be done to be sure that it would work? What type of maintenance and tests would be performed on all the system in order to be certain that if needed, it will work?

**MR. CIUCIURA:** Each year we will do -- we do a test of the sirens and we do it now. Even though in Pickering we don't have sufficient sirens, we do a test of the siren system. We do maintenance twice a year, a formal test once a year.

**MR. HARVEY:** Okay.

**MR. CIUCIURA:** The telephone system, we do the same thing, that's tested once a year for Darlington and Pickering.

Reference the new sirens that will be put in, there will be an acceptance test at the end of that, not only to make sure that they work, but would also have the decibels measured to see that it puts out sufficient sound.

As Mr. Cubitt had said, it has to be above 70 decibels and 10 decibels above background. So we will have that tested to ensure that it complies -- provide that evidence, if you like, to the province and they will sign off.

**MR. HARVEY:** And if needed, who would push the button? How will it work if an event happened, what is the delay?

**MR. CIUCIURA:** Right now, the province makes the decision on public alerting and when to -- when the public alerting should be activated. So within 15 minutes of an event occurring, the province and we are notified within that short -- another -- it's usually only, well, less than ten minutes we'll get a -- to us in Durham Region, we will get a directive from the province on what offsite action to take, what level to go to, and that could include activating all public alerting systems.

We have got two ways of doing it. If it's during daylight hours, we can activate it from my office, so my staff can do it. After hours, the Durham Region Police Service Communication Centre that's staffed 24/7, they are trained and there's a system there that they can activate the sirens and the telephone alerting.

**MR. HARVEY:** Thank you.

**THE CHAIRMAN:** What I'd like to pursue

further, so post Fukushima. You know, one of the lessons from Fukushima was that there are many layers of governance. It's the governance model that's always kind of -- in every major disaster it's the governance, it's the human interaction, who makes those decisions becomes a problem.

And what -- none of you, not you and not Mr. Kontra spoke about the, you know, the federal role. There's another agency that supposedly is managing the Nuclear Emergency Plan, this is Health Canada, and there's a public safety organization that's supposed to react to the emergency, and of course then there's the operator which triggers all of this.

So on a facility by facility is it really clear who does what when? It's a loaded question. I would welcome your views and then Mr. Kontra view also on this.

**MR. CIUCIURA:** Ivan Ciuciura. At our end, and we're really at the bottom end at -- in the community, so I take my direction from the province, and the province gets that information initially from the facility. So the facility makes the call on what's happening.

If there is any delay, if we're going back to the public alerting, I wouldn't hesitate, even if I didn't the authority, to activate the public alerting

system, because all it is is a warning system that something's happened.

It's not a, you know, runaway, it's not evacuate, it just means find out what's going on so if there is any delay in communications in conjunction with my chief administrative officer I would make that decision and we could do that.

But the system is set up that we follow the direction of the province. The province is in charge of the emergency, from my point of view, from the onset. So we take direction from them, and what happens between the province and the federal level is, to be honest, I don't really care.

**THE CHAIRMAN:** But I'm talking about a doomsday scenario which may result in maybe a call for evacuation, et cetera. So how does the -- I assume it's the operator that does the first call and presumably they call all players?

**MR. CIUCIURA:** The operator makes the call to the province. The province makes that decision within 15 minutes, and Mr. Kontra can speak to that. They make the call on the offsite response and provide that direction to the designated municipality, in this case Durham Region on what protective action to do. If it's evacuation, we start with the evacuation.

We have -- we do have a, you know, if the police kick in they have a traffic monitoring and control plan. We set up our centres. We set up our operational centres, so there's a whole series of steps that take place.

**THE CHAIRMAN:** Mr. Kontra, do you want to comment?

**MR. KONTRA:** (Inaudible) to take Mr. Ciuciura off the hook here. The process is very clear from all perspectives. The facility notifies the province and the province within 15 minutes, and that is in the hands of a 24/7 duty watch. So within 15 minutes, we direct the offsite response.

At the highest end, and I'll answer this in a couple of different ways, because you talked about the federal support or responsibility here. At the highest end of categorization, the municipality, in other words, the scenario you're talking about where it's happening now, the municipality can in fact sound the alarm and if necessary, not wait for the province to make a decision.

But generally speaking, the 15 minute response, which is practised frequently throughout the year, both on a test and on a real basis. In other words, there are many minor incidents for which the facility will tell the province that something is being -- has been

categorized and we notify the municipality within 15 minutes. We have that day and night, seven days a week. So over the year, I can't tell you how many without research, but over the year we practice it a number of times.

The federal aspects, the first thing I'd point out with the federal is, of course, they are responsible for three provinces with nuclear facilities. The second thing is the Federal Nuclear Emergency Plan for which Health Canada is responsible, as you pointed out, is in support of the province if things have to come into play that the province doesn't own.

The biggest one I can cite as an example is the aerial monitoring that is brought to the incident by Health Canada. They, in fact, practised this last week at the Huron Challenge and it was particularly successful. I have to say that that requirement only comes in at the third level -- potentially at the third level of the facility's categorization.

So at the second level, which is an abnormal incident, it wouldn't necessarily come in. At the third level, where we go to partial activation, we certainly call on Health Canada and Public Safety Canada and your Commission or your agency to send representatives to our provincial emergency operations centre.

And the reaction is not dependent on those representatives arriving. Both Health Canada and Public Safety as well your organization maintain a 24/7 duty system so we can sound the requirement at any time of day or night regardless of the time of year.

**THE CHAIRMAN:** Thank you for that.

Just a final quick question. Is there a document exists at the site specific, let's say Pickering, which describe all the governance you just described with all level of governments, all -- you know, particularly on emergency, you know, who also talk to the Americans across border. All of the above. Is it a short document?

If you talk about eight volume, one of the lesson that one learn is in an emergency, nobody has the time to read the eight volume. Nobody understands it. We're looking for something simple with focus on an emergency, real emergency situation. Is there such a document?

**MR. CIUCIURA:** My duty officer has a three-page check list for every event and every facility.

**THE CHAIRMAN:** Gee, I'd love to see that. That's what I need to get in my pocket.

**MR. CIUCIURA:** Your pockets better be big because when you consider that each facility, that's Pickering A and B and Darlington and Bruce A and B and

Fermi 2 and Chalk River have four different categorizations that they can make and the duty officer selects the appropriate checklist so that he's not confused by where the situation's happening and goes down that checklist.

The first thing is, of course, within 15 minutes, on-site response. And then we take it from there.

**THE CHAIRMAN:** Okay, thank you. It's been very useful.

Anybody else has any question?

Okay, thank you. Thank you very much and congratulations again.

**MR. CIUCIURA:** Thank you. Bonjour.

## **5. Status Report**

### **5.1 12-M54**

#### **Status Report on Power**

#### **Reactors**

**THE CHAIRMAN:** We will now proceed to the status report on power reactors, which is under CMD 12-M54, and let me see. So I understand that people from OPG will be connecting with us via video conference if there

are questions of Mr. Jager and Mr. Duncan.

Ah, okay. Can you hear us?

**MR. DUNCAN:** Yes. We're good.

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

So first, let's hear from CNSC staff and Mr. Rzentkowski, the floor is yours.

**MR. RZENTKOWSKI:** Thank you very much, Mr. President and Members of the Commission. Good evening.

There are some changes to the status report on power reactors which I would like to bring to the Commission's attention this evening.

First, Section 1.1, Bruce A. Unit 1 is currently at 88 percent of full power and Unit 2 is currently at 50 percent of full power. There's also a change in the status of refurbishment work on Unit 2.

First synchronization to the Ontario electrical grid occurred on October 16<sup>th</sup>, 2012. CSNC staff is awaiting results from the high power physics test before a recommendation can be made on the removal of the hold point for Unit 2. This is the last hold point marking return to service of the unit.

I also have an initial event report, which I would like to describe, concerning Unit 4 at Bruce A.

As reported, Unit 4 is shut down since August 2<sup>nd</sup>, 2012 for a planned maintenance outage. When

carrying out inspection activities, established monitoring system detected higher than planned radiation levels for one activity. As a precautionary measure, given the initial results of this monitoring, the company stopped some work on Friday to allow for additional testing.

The results confirmed it was safe to proceed and work now is back under way.

Section 1.3, Darlington. Last month, we provided an event initial report on Unit 1 transient. As an update to this event initial report presented to the Commission, a further review of a preliminary root cause analysis confirmed that OPG has correctly identified weaknesses which contributed to this event and relating issues.

So currently we consider this item closed unless the final root cause analysis will bring new aspects to the light.

Section 1.5, Pickering A. I also have an update on an initial event report which was initially presented to the Commission during the last Commission meeting.

I'm sorry; I'm wrong. This is an event initial report which will be presented to the Commission for the first time.

During Unit 1 outage on October 12<sup>th</sup>, 400

litres of heavy water was spilled, resulting in high airborne tritium levels in the moderator room. The moderator room is in containment.

As a result of the clean-up operation, two workers were placed on removal as they exceeded the action level for tritium uptake.

I also have an initial report concerning Unit 4; Unit 1 as well.

On October 6<sup>th</sup>, maintenance work on the conventional side of the plant resulted in asbestos contamination event where asbestos containing powder was dispersed in various areas of turbine hull. Some areas were isolated and had to be cleaned up.

OPG continues to investigate the root cause of the event.

The Joint Health and Safety Committee declared a work stoppage on October 16<sup>th</sup>, 2012. Work has been resumed on October 19<sup>th</sup> in all areas.

However, some areas in Unit 1 turbine hull remain as asbestos exclusion zones. Entering those zones requires the approval of the shift manager of the station.

The Ontario Minister of Labour is investigating this matter, working very closely with the CNSC site staff. CNSC staff will provide further update once OPG complete root cause analysis of this event.

Also concerning Section 1.5, I would like to update an operational status of Unit 4. Unit 4 is returning to high power operation following a forced outage to repair the main output transformer. The unit is now critical, at 0.5 percent of full power.

I would also like to update Section 1.7, Point Lepreau.

The Point Lepreau Unit is at 35 percent of full power. There is also a change in the status of refurbishment work. Turbine generator commissioning continues and first synchronization to the electrical grid occurred on October 24<sup>th</sup>, 2012.

So that means that Point Lepreau generating station sends electricity to the grid for the first time since 2008. This concludes my status update on power reactors.

**THE CHAIRMAN:** Just an observation. When you have kind of a diminutive updates it works when you give us a whole story about a new, initial event -- we can't follow it. So we will have to adjust in how you do that.

It's open for questions. Mr. Tolgyesi.

**MEMBER TOLGYESI:** You didn't speak too much about Gentilly 2.

**MR. RZENTKOWSKI:** Because I have no update

to the status report which was provided in writing a week ago.

**MEMBER TOLGYESI:** Is there a -- yeah, is there an obligation to submit status reports or if they don't the power generation station doesn't want to do that, they don't do it?

**MR. RZENTKOWSKI:** I would like to be very clear. We provided a status report of Gentilly as of a week ago. And the status update is -- this status is still current. There is nothing to be updated.

So that means that the station is operating at approximately 89 percent of full power. So this hasn't changed.

**THE CHAIRMAN:** You can elaborate -- maybe a few words about what's ahead in terms of what the licence says and what is the current government view here.

**MR. RZENTKOWSKI:** In the current licence, we have a hold point at the end of December of 2012. The hold point was inserted into the licence to allow Hydro Québec to decide about the future of the unit.

So the options are either continue operation if fitness for service will allow that, end of commercial operation if this is the current decision of the Quebec Government, or proceed with the refurbishment if the situation changes.

**THE CHAIRMAN:** Alors c'est Gentilly 2 - pouvez-vous expliquer en français s'il vous plait ?

**MR. RZENTKOWSKI:** Yeah, I will ask Mr. Francois Rinfret.

**THE CHAIRMAN:** Vas-y.

**MR. RINFRET:** Bonjour. François Rinfret du Programme de Règlementation de Gentilly. Comme M. Rzentkowski l'a mentionné tout à l'heure, il y a un point d'arrêt à l'exploitation de Gentilly à la fine de l'année 2012, donc le 31 décembre 2012. D'ailleurs le titulaire s'est engagé par lettre à appliquer un état d'arrêt garanti le 28 décembre pour respecter le point d'arrêt qui est dans le permis d'exploitation.

On a discuté aussi du fait que le 19 septembre (sic) il y a eu une élection provinciale. Le lendemain, le gouvernement provincial a décidé de ne pas procéder à la réfection de la centrale Gentilly 2, donc de laisser -- mais de laisser l'exploitation se poursuivre jusqu'à la fin de l'année. Alors c'est à peu près l'explication.

**THE CHAIRMAN:** Autres questions?

**UNIDENTIFIED SPEAKER :** (Inaudible)

**THE CHAIRMAN:** Mais concernant Gentilly 2? Mais concernant Gentilly 2, quand est-ce qu'il doit présenter des plans de déclassement?

**MR. RINFRET:** François Rinfret. Le plan de déclassement amélioré - pour ne pas dire préliminaire, mais amélioré - est attendu dans plusieurs mois. Ce qui a été reçu à date à la -- chez le personnel, c'est la stratégie des premiers -- en fait des deux premières années, là, jusqu'à ce que le titulaire atteigne ce qu'on appelle "l'état de stockage sûr". Alors c'est une transition de l'exploitation jusqu'à un état de stockage sûr, si vous voulez, une espèce de dormance qui peut durer pendant plusieurs années. Alors cette stratégie est reçue et évidemment -- ça a été reçu vendredi dernier. On a commencé - le personnel - à revoir ce document. On a envoyé ça à nos spécialistes pour être sûr qu'il ne manque rien dans cette stratégie pour les prochains mois.

**THE CHAIRMAN:** Merci. Ms Velshi.

**MEMBER VELSHI:** Dr. Rzentkowski, for you, On the Bruce 4 event, you're so cryptic in your description of it. So I mean -- I was kind of puzzled on why this was even an initial event report. How high were the radiation levels and is that standard? So if they're higher than expected and as you stop work, investigating are okay, you start -- that it actually meets the definition of an initial event report?

**MR. RZENTKOWSKI:** Yes. This is truly an initial event report since we don't have specific details.

But from our standpoint, really, the action taken by Bruce Power management reflects a good safety culture because they estimated potential radiation levels at the work areas, and they noticed that they were slightly higher than those estimated. And this is precisely the reason why they decided to stop the work.

**MEMBER VELSHI:** Yeah, that's why I was questioning why is this an event report. Is that because the potential exposure could have been really high?

**MR. RZENTKOWSKI:** Yes, and because of the work stoppage.

**MEMBER VELSHI:** Which then brings me to the Pickering A asbestos event.

When you gave us an update, the annual NPP updates if I recall correctly, the asbestos issue was a big concern for the unions at Pickering. And in fact I think had an intervention on this and -- so all I'm going to say is we look forward to getting an update on what the investigation shows.

And my last -- this is a question, was on the tritium incident that you mentioned where the two workers were placed on removal. Can you give an indication of what their exposure was? Or the uptake was?

**MR. RZENTKOWSKI:** I will ask Mr. Miguel Santini, the Regulatory Program Director for Pickering

station to respond to that question.

**MR. SANTINI:** Miguel Santini for the record. For this type of work, there is a planned dose or committed dose on this staff. And what has happened is that the uptake was higher than the planned dose. And later on, OPG found out that it was above the action level. And the dose was around two -- between two and three millisieverts. And that was reason enough for OPG to take the decision to remove the staff. Maybe OPG could expand a little bit more after they -- advances on the investigation.

**THE CHAIRMAN:** Anything else? Anybody else? I -- on Darlington 1 -- on the explanation of the event initial report. Okay, so I read the sentence at least two or three times.

So in the middle it says: "*OPG concludes that the failure of the single valve led to this transient.*" (As read)

And then I read the next one: "*Although there are many contributing factors, the primary one is the failure to meet the design intent of the station by not providing failsafe isolation of the instrument air system from the purification system for the pressure and inventory control system.*" (As read)

Is that in English? I mean I've no idea

what it says. None. Zero. How you explain something like this in this language?

**MR. RZENTKOWSKI:** In some instances, using plain language to express those complex issues is very difficult because, on the other hand, we have to be very careful and not trivialize the issues at the same time.

I do recognize it also and I have to admit that this was probably taken directly from S99 report. And those reports are typically written using a lot of technical jargon.

**THE CHAIRMAN:** I have no problem if you -- but you just said it's now - it's a closed case because you -- they identify -- and I still don't understand what was the root cause here. That's really what my problem is.

**MR. RZENTKOWSKI:** Okay. We'll take this case and we'll try to do our best to simplify our future reports. But I have to admit that this is not always an easy task.

**THE CHAIRMAN:** You can take as much space as you can. You don't have to squeeze it into this one page. You got to explain what the inventory control system -- and how the air pressure -- I really have no idea the way it is and why it is.

**MR. RZENTKOWSKI:** M'hm.

**THE CHAIRMAN:** OPG? Please.

**MS. SWAMI:** Laurie Swami, for the record.

I believe that Brian Duncan, the senior VP from Darlington is online to be able to answer the questions that you're asking. Could I suggest we ask him to make a comment?

**THE CHAIRMAN:** Okay.

**MR. DUNCAN:** Okay, good evening Dr. Binder.

For the record, my name is Brian Duncan; I'm the senior vice president of Darlington. Quite simply, this valve -- the root cause, the mechanical failure if you will, was the valve itself failing open.

The root cause was looking at how did we end up in a position where a single three quarter inch valve could cause this much grief. And so the root cause has looked and said, well, you know, did the design of this meet the intent that we needed, did it meet industry best practice.

And quite simply, no it didn't. We had one small valve that separated a pressurized air system, instrument air, from the heat transport purification system in this case. So that single valve opening allowed instrument air to push its way into purification and eventually to air lock the feed pumps through the PHT system.

What we've done since then, we repaired

that valve, we now have done a review to look for other instances where air systems are tied in like that and we've double isolated them. And we will look ultimately down the road to how we will modify this.

And frankly, what we'll do is we'll put -- we'll either separate entirely and put blocks in there or we'll have a go at some kind of quick disconnect system so that we don't have to depend upon a single valve having to hold air back.

**THE CHAIRMAN:** Did you have to modify other NPPs in other site, or is it strictly for this characteristic of the Darlington site -- the Darlington unit?

**MR. DUNCAN:** Again, Brian Duncan. We have shared that information with Pickering, we've shared it with the Bruce sites as well. Historically, at OPG-built facilities, these systems were quick disconnect airlines in the past. At Darlington, it was hard pipe. It was seen at that time as an enhancement. I suspect we're probably the only plant that has that feature, but we will -- you know, as I say, we will make sure we share that with our peers so that they can benefit from the review we're doing.

**THE CHAIRMAN:** Okay, thank you. Anything else? All right, thank you.

Are there any other initial reports or event report? I guess not.

So the next item on the Agenda is regarding the regulatory oversight of the transition between operation and decommissioning of a nuclear power plant. And Mr. Rzentkowski, you're still it I guess.

## **6. Information Item**

### **6.1 12-M60**

#### **Regulatory Oversight of the Transition between Operation and Decommissioning of a Nuclear Power Plant**

**MR. RZENTKOWSKI:** Thank you very much, Mr. President. Over the past two years, OPG undertook preparation for the end of life of Pickering A and B stations. The end of commercial operations of Pickering units has been established for August 2020.

More recently, the Québec government announced its decision to end commercial operation of Gentilly II reactor in December 2012. In response to this decision, Hydro Québec is working on the end of life plan for the Gentilly site.

Recognizing the need for regulatory guidance, CNSC staff revised the regulatory document RD-360 which is now entitled "Long-term Operation Management of Nuclear Power Plants". This regulatory document outlines CNSC requirements and expectations for a nuclear power plant life extension, continued operation and end of life.

The document is currently undergoing public consultation and will be presented to the Commission for approval in January of 2013. Today, however, it seems like a good opportunity to discuss the key elements of the NPP end of life plan, specifically the transition from power operation to decommission.

The objective is to familiarize the Commission with these elements and demonstrate that the regulatory framework is adequate to maintain safety of nuclear power plants during this transition.

The presentation partially builds on the draft document, RD-360, and is presented as a preliminary information only. With me today is Mr. François Rinfret, Regulatory Program Director of Gentilly II and Point Lepreau stations who will make this presentation. François.

**MR. RINFRET:** Thank you, Dr. Rzentkowski. My name is François Rinfret. I've been asked to give you

this short overview of the typical steps involved in the transition from operations to decommissioning of a nuclear power plant and its regulatory perspective. So I will put it into context.

Three power reactor sites are currently in a safe storage state, Gentilly I, Nuclear Power Demonstration, the so-called NPD, and Douglas Point. The three hold a similar type of licence, delivered to AECL, now the sole licensee of these three, it used to have co-licensees in the operation of them, either Ontario Hydro or Hydro-Québec. These are now waste facility operating licences delivered by the ACB in the mid-eighties for indeterminate or indefinite lengths of time.

These three reactors are all in safe storage, waiting for a deferred decommissioning. We'll come back to these concepts later.

Each licence will be consolidated into a decommissioning licence and in turn with G-1 at the end of 2013. The three stations also are partially dismantled. The cores are intact though.

The activities of the licensee at the three sites are under CNSC oversight. Licensee decommissioning strategies are approved by CNSC. This picture of Gentilly-1 was taken around 2008, 2009. It illustrates one of the rooms within the reactor building. I think

some of you, Commission Members, were there for that visit.

There are also reactors planned for decommissioning, we mentioned it, by their licensees, Pickering A and B, around August 2020 and Gentilly II in December 2012.

Decommissioning strategy under consideration and currently is the subject of communication between OPG and CNSC.

Note that units 2 and 3 are currently in safe storage at Pickering. For Gentilly II, Hydro Québec submitted a strategy on Friday, October 19. It's currently being reviewed by staff.

What does a decommissioning strategy look like? Well, it could perhaps be an immediate decommissioning, that is within two to 10 years of the end of operation. And that's a direct transition from operation to decommission, basically. It could perhaps be a deferred decommissioning. That means in the 25 to 40 year range, the station will be mud-balled.

CNSC requires it to proceed to safe storage state prior to decommissioning. Currently, all initial decommissioning plans include a safe storage phase. Sorry. We'll return later to the expectation of a decommissioning strategy.

Commission has seen this aerial photograph a number of times. Please note the two reactor sites, the ASSCI, that is where storage of irradiated fuel is currently taking place in the middle of the picture. The IGDRS, that's a facility for low- and medium-level waste generated from the refurbishment or dismantling activities eventually. And the ASDR, which is still in use for some low-level waste.

Of much interest is the fact that the G-I reactor licence to AECL is on land owned by the licensee Hydro Québec for Gentilly II. This important fact shall lead the companies to shared understanding of the requirements, activities, risks and grounds for decommissioning.

In the area of the regulatory framework, two laws govern the oversight of activities such as decommissionings (sic), the *Nuclear Safety and Control Act*, with its class 1 facilities regulation -- sorry about the acronym in there -- and the *Canadian Environmental Assessment Act*. As for enforceable requirements, CNSC regulatory document 360, revision 2, specifically covers the end of operations and transition to decommissioning. Other guidance is also available --we named a couple: G219 and G206, covering the planning and also the financial guarantee aspect.

As well, our Canadian industry standards now appear in the licenses of operating reactors. That's the CSA N29-294.09 and decommissioning. For example, Point Lepreau and Gentilly 2 license conditions include that document and, also within Pickering, and it will be active in December 2013.

International standards also guide the regulatory framework of member states and two of them are listed here. So the regulatory framework, stakeholders is solid from the end point and transition perspectives.

In order to place into context the next topics, let us take a step away from decommissioning and take a higher level look at the regulatory framework.

The typical nuclear plant lifecycle stages include, on a normal timeline, set preparation, otherwise used as the word "citing" in some cases, its construction, which includes some commissioning, its operations, which include more commissioning, and activities such as power operations, normal outages, transitions, safe storage. And at the end of operation cycle, decommissioning with its dismantling, and finally the site restoration and abandonment.

Currently, the licensing stages take into account the possible modes of operation. No license activity is taken unless under license oversight.

Another picture of G-1, the reactor face here, and, actually, this is under the reactor - since this vessel is oriented differently from the typical PHWR CANDUS - is very recent and shows you the current state of the part.

So, as a prerequisite to operations, that is while the station is being constructed in our famous timeline, constructed and commissioned, the licensee had to submit an update, an initial or preliminary decommissioning plan and the final full guarantee. We call that the financial guarantee assures that there are funds secured and sufficient funds for the necessary work after operations have ended, for cleanup, dismantling, transport waste to a permanent location, return the land to a needed condition in the industrial use of green pastures, as described in the decontamination plan -- sorry, the decommissioning plan.

These documents were reviewed therefore by the CNSC staff before recommending the Commission issuing of an operating license and at every renewal, indeed.

Towards the end of operation, CNSC requires the licensee to develop and implement an end-of-operation plan consisting of, basically, a strategy, typically the schedule and milestones for shutdown and decommissioning for each unit from all the unit stations and including, of

course, the date by which the licensee is planning to apply for a decommissioning license, basically a strategy in an assurance of firm dates.

Also, as sustainable operation funds are expected, addressing the period of operation up to the permanent shutdown of each reactor unit.

And, one of the two following items: either an updated decommissioning plan if the strategy involves a period of safe storage prior to its decommissioning -- which we call a deferred decommissioning, and that appears to be the case for G-2 -- or a detailed decommissioning plan -- and I stress the word "detailed" -- if the licensee's strategy involves proceeding immediately with the decommissioning of the MPP after the permanent shutdown of the reactor units, what appears very much like Pickering.

The licensee's decision to proceed to immediate or deferred decommissioning is the main driver for the selection of documents. So, the licensee must make his strategy known and, depending on the activities it wants to complete in their schedule, modify the management system and working documents to demonstrate its ability to reach these objectives.

And I mentioned earlier that CNSC has just received the end-of-life plan from Hydro-Québec for

Gentilly-2 plant.

As a licensee turns the key to off -- so to speak -- it achieves the usual guaranteed shutdown state that it normally goes to for any outage, but then, as it has to transition to safe storage, CNSC expects a description of changes to the licensing bases: how is safety maintained within this shutdown reactor and safety within the plant, and a description of activities for safe storage.

In front of that, the licensee then must deliver these activities leading to safe storage -- and the examples given here are typical --, defuel the reactor, drain the heavy water systems, maintain surveillance, clean and decontaminate some areas, maintain cooling in the spentual (phonetic) base, perform radiological surveys, transfer some fuel to dry storage, plan the detailed decommissioning in due course, and apply for the next license.

During that time, CNSC continues with risk-based compliance verification activities. Staff oversees the licensees as it has to maintain its engagement for the management of severe accidents, should they occur; post-Fukushima, there are still requirements to be met, provide the maintenance of the systems, fuel handling is going to be very much used, instrument air for many of the

components given by air and red under-air systems, suppress system needed such as backup power and ventilation for these activities that have to take place, maintenance of fire protection, health and safety environment and healthy and safe environments for its workers, environmental protection with the various releases that are going to --- are bound to occur.

IAA also continues its safe good monitoring with the CNSC as well, since they're sewage on site. Security, of course, is still in place.

So, as the licensee turns the key to off, activities continue to need regulatory attention during that transition.

In preparation for the decommissioning, more specifically the dismantling activities, CNSC requires a decommissioning license application and that detailed decommissioning plan we talked about. It would require a sort of site-white strategy. I will come back to this in a minute.

An environmental assessment conservation has to be given as well. The determination on environmental assessment is only taken upon review of the project. So, a possible delegation in the EA process, if a provincial EA is required, might be taken into consideration. But, of course, the decision remains with

the CNSC.

In this process, there also exist opportunities for public and aboriginal engagements. Given these requirements, the licensee, with its license in hand, dismantles the remaining structures and components to the detailed commissioning plan, operates its waste management facilities, monitors, expands fuel (phonetic) on site until a final repository is available, and, of course, is still responsible for low-level wastes.

I mentioned the site waste strategy. In this case, it is necessary to assure everyone at that site that site activities do not interfere with each other. In the case of EAEL for G-1 decommissioning, on lands owned by Hydro Québec, in the presence of G-2, soon in a decommissioning mode, brings the need to share responsibilities, schedules and coordinate these activities.

Equicord on abandonment: in this phase, the CNSC expects an application for a license to abandon support by the results of the decommissioning and the final decommissioning report, after all has been done to site and results of the environmental monitoring plan. The licensee receives this license and cleans up to the green field or brown field, depending on the agreed final status needed.

So, as a conclusion to this discussion, the regulatory basis is currently well established, as requirements and guidelines exist that enable a transition from operations to decommissioning.

The overall decommissioning process can span over 30 to 40 years, as site specific license and strategy is needed for the applicants, for facilities and site restoration.

An operating license can cover these steps to place the reactor in readiness for decommissioning.

The transition from operation to decommissioning and part of this timing is a licensee's decision that leads to known needs to be technically supported before activities take place. And the licensee should respect in due process and participation.

Initial activities are conducted under the current license, typically an operating license as many licensee programs and structures components assistance still runs with risk that are similar to normal operations.

I believe you have seen this draft representation of the years to come around the Pickering plant with its various coverage and the four phases of the operation and decommissioning for Pickering.

Key dates in the operation in the timeline:

safe storage, eventually decommissioning and site restoration.

I won't go into the details of the forming phases for it, but that's available.

This is a timeline we built in example to weigh (phonetic) a draft timeline built on the operating plan and regulatory oversight for G-1. The dates shown there are showing and eventually an application for a license to pursue the dismantling around 2016. So, this is a draft and it's under current knowledge that we have receive from EAACL and, I believe, it shows a restoration of site to happen around 2024. That will have to be updated since it is very probable that the nuclear waste facility for fuel will not be ready -- permanent storage will not be ready before 2035 or so.

The next one is a G-2 representation as a draft. This one has been built from data. At the time, we have not received this strategy from (inaudible) directly to us, but it was built from public documents established by Hydro-Québec as they were explaining the constituents, the current plan for dismantling, for decommissioning and dismantling of G-2.

The strategy received on October 19 might change this date slightly. But, in essence, that's what the plan would look like. A very short period of

operation from the license that was issued in 2011 to the end of 2012 and then moved towards a very short stabilization period which would last about two years during which the activities are very similar to what you have seen in the slide on transition. So, defueling, dewatering, drying, preparing some systems for the period of safe storage, and eventually along safe storage period before the next phases. So, this is a draft.

Okay, I think that we can leave it there.

**THE CHAIRMAN:** Okay. Thank you. Let's open it for discussion and I have Monsieur Harvey.

**MEMBER HARVEY:** Pour -- en ce qui concerne Gentilly-2, est-ce qu'on peut dire que ce qu'ils ont à faire dans les prochaines semaines, dans les prochains mois, c'est quelque chose de semblable à ce qui aurait été fait s'ils étaient allés à la réfection?

**MR. RINFRET:** Absolutely. Excusez, je vais continuer en français.

Absolument. Les premières étapes sont absolument les mêmes. Ce sont les mêmes étapes qui avaient été présentées pour la réfection, donc une période évidemment d'arrêt bien contrôlée et suivie d'un retrait du combustible qui peut prendre jusqu'à cinq mois.

**UNIDENTIFIED SPEAKER:** Cinq mois?

**MR. RINFRET:** Cinq mois. 0, 5. Cinq mois.

Suivie d'une période où on retire l'eau des systèmes importants, des systèmes d'eau lourde en particulier. Avant de pouvoir retirer l'eau, les réservoirs qui vont recevoir cette eau du caloporteur et du modérateur seraient préparés, ce qui n'est pas le cas présentement.

Incidentement, pour votre intérêt, ça ressemble beaucoup au stockage qui avait été entrepris à la centrale de Point Lepreau. On utilise certains réservoirs à d'autres fins et ils sont transformés pour recevoir l'eau lourde de certains systèmes. Donc, ici on parle encore de plusieurs mois et ainsi de suite.

**MEMBER HARVEY:** Quand on parle de deux options, c'est quelque chose qui dure de deux à dix ans ou quelque chose qui est sur une plus longue période, comme on voit ici là, est-ce que c'est réellement deux options ou c'est que la deuxième option est toujours plus facile parce que ça reporte les choses dans le temps?

**MR. RINFRET:** Ce sont deux options que le titulaire doit choisir dépendant de ses engagements peut-être financiers ou des critères que je ne connais pas. Le critère -- un critère important, c'est que, en attendant plusieurs années, il y a une décroissance radioactive qui se produit. On dit que pour les produits de fission à durée de vie courte, bien, c'est gagné, ça fait une exposition de moins au personnel. C'est un des éléments

qui est apporté dans l'équation. Ça permet au titulaire de décider comment procéder et de décider, à tête reposée, la méthode, mais aussi les engagements et les différents contrats qui vont être donnés. Donc, c'est une décision du titulaire.

**MEMBER HARVEY:** Pour ce qui est des engagements financiers, Hydro-Québec c'est simplement une garantie du gouvernement du Québec. Est-ce qu'ils n'ont pas un fonds ---

**MR. RINFRET:** Oui.

**MEMBER HARVEY:** --- un fonds de garantie comme pour d'autres centrales?

**MR. RINFRET:** Oui. Le fonds a été garanti lors... et d'ailleurs a été repris et réajusté lors du dernier renouvellement de permis de Gentilly-2 et c'est une forme qui a été acceptée par la CCSN. Il y a, évidemment, toujours une revue du plan de déclassement à haut niveau pour voir si les fonds sont suffisants. Alors, les fonds qui avaient été acceptés en 2010 ou 2011 pour le renouvellement de permis, évidemment, imaginaient une réfection et un travail de déclassement pas mal plus tard, 30 ans plus tard. Donc, il y a certainement un ajustement qui devrait être fait par Hydro-Québec pour valider si ces fonds sont suffisants.

Mais, essentiellement, le bailleur de fonds

d'Hydro-Québec, c'est le gouvernement du Québec, alors, je ne me souviens plus exactement de ce qui était écrit, mais c'est un document qui a été accepté par la CCSN comme étant adéquat pour subvenir aux besoins du déclassement.

**THE CHAIRMAN:** Mais, on a un plan d'action, un plan de déclassement avec l'argent, avec les montants qui est précis. C'était garanti par le gouvernement du Québec.

**MR. RINFRET:** Oui. C'est ce que je suis en train de vous dire. Oui, c'est ce que je suis en train de vous dire. Il existe un... C'est la loi.

**THE CHAIRMAN:** Maintenant, combien c'est l'argent maintenant dans ce plan, c'est?

**MR. RINFRET:** Un des chiffres qui me revient, c'est 685 millions qui, je pense, était le fonds... qui tenait compte du déclassement, mais aussi du transport du combustible. C'est le dernier chiffre qui me revient en tête. Évidemment, ça devrait être ajusté en fonction du fait qu'il n'y aura pas de réfection, mais, non, je répète, la garantie existe, elle a été acceptée par la Commission et le plan de déclassement qui la justifie aussi existe.

**THE CHAIRMAN:** Le fait qu'il y a des chances maintenant qu'il a été approuvé, où est-ce qu'est la date pour la licence? La licence existe maintenant.

La licence d'exploitation...

**MR. RINFRET:** Oui. Le permis d'exploitation de G-2, le permis a été octroyé en ---

**THE CHAIRMAN:** Pourquoi est-ce que vous ne montrez pas cette présentation?

**MR. RINFRET:** Hum -- Je pense que si vous regardez l'exemple 2-B, à gauche complètement du tableau, vous voyez: Plan de déclassement initial, Garantie financières, Renouvellement de permis en 2011. Il est là. Et vous voyez, après ça, l'application pour le permis d'exploitation ou de déclassement - dépendant de comment il sera appelé à ce moment-là - en 2015. Parce que le prochain permis serait émis en 2016. Et ça, c'est sur le diagramme présentement.

**THE CHAIRMAN:** Oui, mais il faut expliquer que le premier existe jusque pour cinq années maintenant.

**M. RINFRET:** Oui, c'est sur le diagramme présentement. C'est un permis qui est valide et qui permet les -- je pense que je comprends l'orientation de la question. Le permis actuel d'exploitation permet les activités objet de transition jusqu'à la prochaine émission de permis en 2016.

**THE CHAIRMAN:** Alors, il faut vraiment expliquer ça, parce que les gens ne comprennent pas cette licence -- ce permis, je m'excuse.

Mr. Harvey?

**MEMBRE HARVEY:** Ça va pour moi.

**THE CHAIRMAN:** O.k.

Okay, anybody, Ms. Velshi.

**MEMBER VELSHI:** Just a quick question. I know you said the regulatory basis has been well established. Does the CNSC have to build any special capability to look after decommissioning plants and submissions of strategies, or is this normal course of business for you?

**MR. RZENTKOWSKI:** No, I don't believe this is necessary. We have the Waste and Decommissioning Division who has enough know-how to assess the -- both the preliminary and the final decommissioning plans.

**THE CHAIRMAN:** Anybody else?

But you did mention that we are not consulting on regulatory documents -- updating of our regulatory documents here because there's some things in here that I predict will change. I just don't see how you can do decommissioning in two years, no matter what anybody says. As long as the fuel is hot, nobody will go in there and decommission in two years. And the environmental assessment as you know, is depending on the project list in the new CEAA, that could all change also, so the things that yet we need some work -- you need some

work on, if I understand correctly.

**MR. RZENTKOWSKI:** If I may clarify the statement made about two years, the minimum time required for the fuel to stay in the spent fuel bay is seven years. This is the time required to bring down the cooling requirements to the level which will be handled in the safe storage and same applies also to radiation levels.

**THE CHAIRMAN:** But what does two year decommissioning means?

**MR. RZENTKOWSKI:** This would have -- for this probably the new dry storage canister would have to be designed which will provide sufficient cooling and also would provide sufficient barrier for the radioactivity.

**THE CHAIRMAN:** I don't know where you got the two years from. It's the first time I hear two years as even a possibility.

Anybody? Any of our experts? Where are our specialists here? Anybody from the industry? I can see some familiar faces. Anybody wants to step in and tell me how you do decommissioning in two years?

Go ahead,

**MR. ELDER:** I think it's important we are talking about transitioning and decommissioning even when there is -- no matter how you do it, even with deferred, you actually do some things. We're looking often at the

end point or where you get to taking in part the reactor core.

There are many activities that you may consider decommissioning and that become -- come before that point. So that if you wanted to move very quickly, you could get this situation where you would be taking down some sort of buildings within a couple of years.

So, you know, if you look at it from reducing the footprint of the plant, you can say if you wanted to be very quick -- that said, it would depend on the layout of the facility. I think you have different options in Pickering where there's a central fuel bay and you can work from the other end of the plant versus G-1 or G-2 where everything is integrated.

So, I mean it is possible to start activities but it's unlikely that you would get to actually dismantling the heavily -- a lot of the components inside the core within a two-year period, but you could actually start certain activities that would be considered decommissioning.

**THE CHAIRMAN:** But that's not the way it's presented. I think it's presented as two different options here and I ---

**MR. ELDER:** There is -- to give the options in terms of immediate one is you start working on your

planning and do it as quickly as possible. The other one you wait, there are certain advantages on radiation fields coming down. The other determining factor often on that one, the strategy is related to what is the ultimate disposal source of both the high-level waste and the low-level waste.

So it doesn't make sense to take down a plant and just move it a few hundred metres to a waste storage facility that sits there for another fifty years before it goes to a long-term repository.

So, this has been a deciding factor in a lot of approaches, is that in absence of a place to put the low and intermediate level waste, the conclusion was you sort that out before you start creating a large volume with that waste through decommissioning.

**THE CHAIRMAN:** Don?

**MR. HOWARD:** Thank you.

I think if we look at a generic approach, immediate and differed decommissioning. So immediate decommissioning means you start dismantling right away, depending on the facility Dalhousie SLOWPOKE reactor was done in under two years. And that was complete dismantlement, license to abandon green field levels.

So, depending on the facility that you are looking at, if we're talking generically. So, basically

when you're looking at a nuclear power plant, I think decommissioning, especially in the U.S., some of the reactors, ten years.

**THE CHAIRMAN:** Well, okay, well --

**MR. HOWARD:** So it depends on the facility that you're looking at ---

**THE CHAIRMAN:** That is a useful explanation but is sure as hell didn't come through particularly with the kind of example you were giving ---

**MR. HOWARD:** Mr. Jammal would like to say a few words.

**MR. JAMMAL:** Since you asked for the specialist, sir, I'll take the account over here.

As Don mentioned, this is generic presentation that encompassing every decommissioning. So we look from the SLOWPOKE all the way to the longest possibilities. So in the two years period you've got the generic action that can be done for low-level ---

**THE CHAIRMAN:** So, it would have been nice if you gave an example of a two-year rather than those two ---

**MR. JAMMAL:** Point well taken, it's granted we got this thing together as of Tuesday or yesterday or Monday, so we will expand on this. We try to do a generic 101.

**THE CHAIRMAN:** I'm just trying to help you.

**MR. JAMMAL:** I know, I'm taking your comment and we will adjust it for the next time.

But from Ms. Velshi's question is do we have the regulatory infrastructure in place. There is -- nothing special is required. We've got Mr. Elder and Mr. Howard who are in charge of the decommissioning as a regulatory oversight.

And, again briefly as mentioned, there are activity can be done under operating licence and activity can be done in combined operating and decommissioning licence. So it becomes an activity-driven licence with respect to what is the end-life is going to be of that facility, globally.

**THE CHAIRMAN:** Dr. McDill?

**MEMBER McDILL:** A quick question. Can the can stores used by Pointe Lepreau and Gentilly-2 be used sooner than the DS -- the dry storage containers that we are familiar with at OPG? Someone said seven years and I sort of picked on that.

**MR. RZENTKOWSKI:** The design requirements are specified for the fuel being in the spent fuel bay for seven years to reduce the heat load and to reduce the radiation load on the canister.

So from that standpoint one would have to

redesign the canister in order to take the new design requirements into consideration.

**MEMBER McDILL:** Earlier today, when you weren't here, 10 years was given as the minimum. So that's why I was asking. Going to the OPG dry storage containers was 10 and then today you said seven, so I'm just trying to check with ---

**MR. RINFRET:** For the 600 megawatts, it's seven years.

**MEMBER McDILL:** It's the 600 megawatts that's the issue then, yes.

**MR. RINFRET:** For the can store and the ---

**THE CHAIRMAN:** Any --- Mr. Harvey?

**MEMBRE HARVEY:** Just -- étant donné que Hydro-Québec a le permis pour faire ce qu'elle a à faire dans les prochains mois, le document que vous avez reçu, c'est quoi? C'est simplement une lettre en disant voici comment nous allons procéder. c'est ---

**M. RINFRET:** Les attentes du personnel sont que le titulaire doit nous dire ce qui va arriver entre la période d'aujourd'hui où une décision est prise et la fin des opérations.

La fin des opérations de production électrique aurait pu se passer en 2015, en 2016, advenant une capacité de la centrale. Elle est très courte, mais

quand même les exigences sont que le titulaire devait nous informer de la façon de faire fonctionner la centrale jusqu'à la fin de l'année.

Il aurait pu avoir, par exemple, des cas où la moitié du personnel se sauverait. Ça pourrait être le cas évidemment si il y a une annonce de fermeture, il y a 800 employés qui sont là. Il y aurait lieu d'apporter des ajustements pour être certain que les postes-clés sont encore remplis, que certains spécialistes sont encore là pour assurer. Donc, ça fait partie des attentes d'y aller avec des engagements jusqu'à la fin des opérations.

**MEMBRE HARVEY:** Mais le document que vous avez reçu, là, c'est quoi? C'est une ---

**M. RINFRET:** C'est une brique de 100 pages qui donne une description dans chaque domaine de sûreté et de contrôle, les activités spécifiques qui doivent être prises pour les deux prochaines années ---

**MEMBRE HARVEY:** O.k.

**M. RINFRET:** --- jusqu'à temps que le titulaire arrive à l'état de stockage sûr avec dans certains cas des précisions sur le nombre de -- sur les ajustements qui devraient être pris.

C'est de haut-niveau, il manque encore des détails qu'on va discuter avec Hydro-Québec au cours des prochaines semaines pour être sûr que 2013 se commence

avec assez d'information.

**MEMBRE HARVEY:** Comme ça vous avez des -- y a quand même des exigences au niveau du nombre d'employés, du type d'employés qui doivent demeurer à la centrale pendant cette période?

**M. RINFRET:** Forcément ce sont les fonctions de sûreté qui dictent que la fonction doit être prise. Ça peut être un employé, ça peut être un consultant, c'est au titulaire à avoir un système de gestion qui s'assure que la fonction est bien livrée au moment opportun. Mais on a pas de précision sur le nombre de personnes ou le nombre de ressources dans chaque domaine.

Il doit avoir évidemment le complément minimum de corps pour ce qui est de l'exploitant lui-même.

**THE CHAIRMAN:** Okay, thank you. Thank you very much.

This concludes the public portion of the meeting for today. The Commission will move in close-session for the item on timelines regulations. And the public meeting will resume at 9:00 a.m. tomorrow.

Thank you for your attendance and for your patience.

Thank you.

--- Upon adjourning at 7:42 p.m. /

L'audience est ajournée à 19h42