

**Canadian Nuclear  
Safety Commission**

**Commission canadienne de  
sûreté nucléaire**

**Public meeting**

**Réunion publique**

**February 16<sup>th</sup>, 2012**

**Le 16 février 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. Ronald Barriault  
Mr. André Harvey  
Dr. Moyra McDill  
Mr. Dan Tolgyesi  
Ms. Rumina Velshi

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

**Secretary:**

**Secrétaire:**

Mr. Marc Leblanc

M. Marc Leblanc

**General Counsel :**

**Conseiller générale:**

Mr. Jacques Lavoie

M. Jacques Lavoie

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Ottawa, Ontario

--- Upon commencing at 9:10 a.m./

L'audience débute à 9h10

**12-M1**

**Opening Remarks**

**MR. LEBLANC:** Bonjour, mesdames et messieurs. Bienvenue à la réunion publique de la Commission canadienne de sûreté nucléaire.

We have simultaneous translation, please keep the pace of speech relatively slow so that the translators have a chance to keep up.

Des appareils de traduction 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 la semaine prochaine.

I'd also like to note that this proceeding is being video webcasted live and that archives of these proceedings will be available on our website for a three-

1 month period after the closure of the proceedings.

2 Please silence your cell phones and other  
3 electronic devices.

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

7 President Binder.

8 **THE CHAIRMAN:** Thank you, Marc, and good  
9 morning and welcome to the meeting of the Canadian Nuclear  
10 Safety Commission.

11 Mon nom est Michael Binder. Je suis le  
12 président de la Commission canadienne de sûreté nucléaire  
13 et je vous souhaite la bienvenue. And welcome to all of  
14 you who are joining us through some webcasting.

15 I'd like to start by introducing the  
16 Members of the Commission and I'm really pleased to  
17 welcome a new Commissioner, Ms. Rumina Velshi.

18 Welcome. I'm sure you're going to enjoy  
19 this kind of proceedings.

20 So, I'd also like to introduce the other  
21 members, and to my right, Dr. Ronald Barriault and  
22 Monsieur André Harvey, and on my -- on my left, that's  
23 right, on my left. I get my right and left mixed up here.

24 And on my right is -- now, you got me  
25 really confused here -- Dr. Moyra McDill and Monsieur Dan

1 Tolgyesi.

2 And we have heard from Marc, Marc Leblanc,  
3 our Secretary and we also have Mr. Jacques Lavoie, Senior  
4 General Counsel to the Commission with us today.

5 Marc?

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

9 Please refer to the update of the Agenda  
10 published on February 14<sup>th</sup> for the complete list of items  
11 to be presented today.

12 In addition to the written documents  
13 reviewed by the Commission for today's meeting, CNSC staff  
14 and licensees will have an opportunity to make  
15 presentations and Commission Members will be afforded an  
16 opportunity to ask questions on the items before us today.

17 Mr. President?

18 **THE CHAIRMAN:** Okay, I'd like to start by  
19 calling for the adoption of the agenda, as described in  
20 CMD 12-M2.B.

21 Do I have concurrence?

22 For the record, the agenda is adopted.

23

24 **12-M2.B**

25 **Adoption of Agenda**

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**THE CHAIRMAN:** I'd like to move on to the approval of the minutes of the Commission meeting that was held on December the 15<sup>th</sup>, 2011 and as outlined in CMD 12.M3. Any comments, additions, deletions, et cetera?

Dr. Barriault?

**MEMBER BARRIAULT:** Thank you, Mr. Chairman.

On page 252, Item Number 9 of the draft minutes, the last sentence says that "the CNSC staff added that their site inspector will perform a follow-up of this event", it's regarding to the hydrazine leak at Point Lepreau and there's no date as to the follow-up on that.

Can we ask for clarification?

**MR. RZENTKOWSKI:** Greg Rzentkowski, for the record, Director General of Power Reactors Regulation.

I don't have the draft minutes in front of me, it's not part of my package; but, in any event, our intention is to provide an update in the March meeting.

**MEMBER BARRIAULT:** March meeting, thank you.

**MR. RZENTKOWSKI:** Yes.

**MEMBER BARRIAULT:** Thank you, Mr. Chairman.

**THE CHAIRMAN:** Great. And it's a good catch. As you guys know, I always like dates in our action items. Thank you.

1 Anything else?

2 So for the record, the minutes are adopted.

3

4 **12.M3**

5 **Approval of Minutes**

6 **of Commission Meeting held**

7 **December 15, 2011**

8

9 **THE CHAIRMAN:** So we're now moving into  
10 status report on power reactors and the first item -- the  
11 first item is described in CMD 12.M4.

12 Mr. Rzentkowski, the floor is yours.

13

14 **4. Status Reports**

15

16 **4.1 - 12.M4**

17 **Status Report on**

18 **Power Reactors**

19

20 **MR. RZENTKOWSKI:** Thank you very much,  
21 Mr. President, Members of the Commission.

22 I would like to present a brief update on  
23 the status report included in the CND 12.M4. First,  
24 Section 1.2, pertaining to Bruce B. Unit 7, is currently  
25 at 93 percent of full power. So the power was raised from



1 reported by New Brunswick Power under mandatory reporting  
2 requirements because at no time there was degradation or  
3 impairment of the containment envelope preventing the  
4 containment from performing its safety-related function.

5 Also, this event did not cause a reportable  
6 dose of radiation since radiation levels in containment  
7 were low and the workers were wearing protective equipment  
8 at all times.

9 If this was not the case, the safety door  
10 could have been opened manually at any time.

11 It is also important to note that a similar  
12 event has happened more than 16 years ago. Following the  
13 event, New Brunswick Power was requested to improve its  
14 problem identification and resolution program as well as  
15 corrective action program.

16 These program improvements and tighter  
17 control over engineering design changes make it less  
18 likely for another event to happen, should design  
19 improvements be undertaken by New Brunswick Power.

20 I will also like to respond to concern with  
21 tritium levels in heavy water at Point Lepreau Generating  
22 Station.

23 The safety case presented by New Brunswick  
24 Power adequately addressed the risk posed by tritium  
25 emission to workers, the public, or the environment.

1                   The safety case has been reviewed and  
2                   accepted by CNSC staff as part of preparation for the  
3                   refurbishment activities.

4                   In addition to normal design provisions,  
5                   New Brunswick Power made several improvements to its  
6                   facilities as part of refurbishment to ensure the rapid  
7                   detection, containment and ventilation of tritium under  
8                   either normal operating conditions or due to an unplanned  
9                   event.

10                  New Brunswick Power has also made  
11                  commitments to manage tritium under a five-year dose  
12                  reduction plan. The CNSC staff will continue to provide  
13                  regulatory oversight to monitor the implementation of that  
14                  plan and continuation of New Brunswick Power's very good  
15                  performance in minimizing workers exposure. The details  
16                  of this plan will be explained by Mr. François Rinfret,  
17                  the Acting Regulatory Program Director for Point Lepreau  
18                  Station.

19                  **MR. RINFRET:** Good Morning, François  
20                  Rinfret for the record, Acting Director of the Regulatory  
21                  Program Division dealing with Point Lepreau.

22                  Essentially, these improvements are  
23                  included as part of self-assessment of the New Brunswick  
24                  Power Nuclear Company. For now, we received the self-  
25                  assessments and we verify the appropriateness of the

1 measures that are being considered. These are  
2 recommendations.

3 And these measures are typically related to  
4 the ALARA plan and regard, in particular, field  
5 improvements where you can enclose areas or components or  
6 sub-systems, which may contain some or be the results from  
7 spills from a tritium moderator.

8 Therefore, this is an example of best  
9 practice in the area of Alara.

10 Improved recovery, and that constitutes  
11 along with better detection that is alarming tritium  
12 monitors in zones that are more appropriate than  
13 currently.

14 So this -- these discussions are ongoing  
15 with the CNSC specialists and will continue through  
16 refurbishment in the first few years of operation as well  
17 as their implementation shows results.

18 Thank you.

19 **MR. RZENTKOWSKI:** Thank you, François.

20 This concludes the status report of  
21 operating reactors.

22 **THE CHAIRMAN:** Thank you.

23 Let's open it up for questions.

24 Dr. Barriault?

25 **MEMBER BARRIAULT:** Thank you Mr. Chairman.

1                   On Pickering B, you state really in the  
2                   comments that Unit 6 was shut down on January 29<sup>th</sup> because  
3                   of turbine over speed and protection test.

4                   Can you describe what happened during this  
5                   test? Was it due to refurbishment on its turbines or any  
6                   change of the turbine structure or whatever, that would  
7                   cause it to fail this test?

8                   **MR. RZENTKOWSKI:** Two of our over speed  
9                   devices are typically tested approximately every three  
10                  months. To the best of my knowledge, this is the first  
11                  failure of turbine over speed device at Pickering B.

12                  We believe that component age was not a  
13                  contributing factor to the failure. It was determined  
14                  that there was some -- binding within the trip plunger of  
15                  the over speed trip device, and this led to the failure of  
16                  over speed protection for the turbine.

17                  **MEMBER BARRIAULT:** Is this a fail-safe  
18                  system that if it doesn't work, it shuts down  
19                  automatically or what happens? Is there failure in-depth  
20                  on this thing or safety in-depth in terms of this shutdown  
21                  to this turbine? I have visions of this turbine getting  
22                  completely out of control and over speeding and  
23                  dismantling itself; I guess is what I'm saying.

24                  **MR. RZENTKOWSKI:** That's a very good  
25                  question. I believe it's a fail-safe design, but I cannot

1 confirm it clearly. Could anyone help me?

2 We'll recall this question when we will get  
3 back to the Commission ---

4 **MEMBER BARRIAULT:** Thank you.

5 **MR. RZENTKOWSKI:** --- and answer later on  
6 today. Thank you very much.

7 **MEMBER BARRIAULT:** Thank you Mr. Chairman.

8 **THE CHAIRMAN:** Monsieur Harvey?

9 **MEMBRE HARVEY:** Le réacteur est à 89.3 pour  
10 cent de la pleine puissance. Est-ce que le 89.3 pour cent  
11 est maintenant le niveau maximum d'opération de la  
12 centrale? Est-ce que la centrale, pour différentes  
13 raisons, peut pas exploiter -- ne pourrais pas -- vous  
14 n'accepteriez pas qu'elle opère un pourcentage supérieur?

15 **MR. RZENTKOWSKI:** Je redirigerais cette  
16 question à monsieur François Rinfret qui va répondre.

17 **M. RINFRET:** Bonjour François Rinfret,  
18 directeur du programme pour Gentilly.

19 Écoutez, à quelque dixième de pour cent  
20 près, on est à la limite qui est reliée présentement à la  
21 capacité de la centrale à cause de son vieillissement.

22 Je suis pas à 100 pour cent point zéro pour  
23 cent certain, mais je vous dirais que la limite est à peu  
24 près dans les 89.5 pour cent ou 89 pour cent. En tout  
25 cas, 89.5 ou .7, pas loin de là, Monsieur Harvey. À peu

1 près quelques ---

2 **MEMBRE HARVEY:** C'est la limite allouée qui  
3 puisse arriver pour que ça diminue graduellement avec le  
4 temps.

5 **M. RINFRET:** Effectivement, ça diminue avec  
6 le temps.

7 **MEMBRE HARVEY:** Merci.

8 **LE PRÉSIDENT:** Monsieur Tolgyesi?

9 **M. TOLGYESI:** Merci, Monsieur le Président.  
10 Ça concerne aussi le Gentilly 2, en ce qui  
11 concerne la réfection, avez-vous une mise à jour en ce qui  
12 concerne le début potentiel des travaux de réfection?

13 **M. RINFRET:** François Rinfret, encore.

14 La dernière annonce qui a été faite, au  
15 personnel de la centrale nucléaire, par monsieur Vandal,  
16 le président, directeur général de Hydro-Québec, c'est  
17 que, eux recommandent au gouvernement de procéder à la  
18 réfection. Maintenant, à partir du moment où la décision  
19 quitte Hydro-Québec, c'est au gouvernement du Québec à  
20 faire cette annonce-là. Et si on se fie aux dernières  
21 déclarations du gouvernement, cette annonce-là devait  
22 avoir lieu au printemps 2012. Bon, alors le printemps, ça  
23 pourrait aller jusqu'au 21 juin 2012. Donc on est un peu  
24 dans l'indécision présentement pour ce qui est de cette  
25 décision et -- qui pourrait, j'imagine, modifier à cause

1 d'élection possible par le gouvernement du Québec.

2 **LE PRÉSIDENT:** Monsieur Harvey?

3 **MEMBRE HARVEY:** Juste pour suivre dans ce  
4 sens-là, qu'est-ce qui arrive maintenant avec la centrale?  
5 Ça peut pas être reporté, reporté, reporté. Ils ont un  
6 permis pour exploiter. Est-ce que c'est en décembre  
7 prochain qu'ils devront faire quelque chose?

8 **M. RINFRET:** François Rinfret.

9 Le permis que vous avez délivré à Hydro-  
10 Québec pour juillet dernier indiquait les points d'arrêt.  
11 Le premier point d'arrêt, c'est un point d'arrêt au mois  
12 de décembre dernier, qui permettait de redémarrer la  
13 centrale sous certaines conditions, certaines  
14 démonstrations. Ce qui a été fait et qui continue d'être  
15 évalué aussi parce que la Commission attend des rapports  
16 de suivis de certaines -- de la condition de certaines  
17 composantes.

18 Maintenant, pour ce qui est du prochain  
19 point d'arrêt, c'est un point au 31 décembre 2012.

20 **THE CHAIRMAN:** Ms. Velshi.

21 **MS. VELSHI:** I have a question on the high  
22 tritium levels in the heavy water at Point Lepreau.

23 And I understand the controls that you have  
24 mentioned to manage any potential exposure from that. But  
25 I'm not sure what the tritium levels are in the moderator

1 but wouldn't Alara principles dictate that you try to  
2 minimize the source of the tritium and are there plans  
3 for, you know, perhaps de-titriating the heavy water, in  
4 the long term.

5 **MR. RZENTKOWSKI:** Thank you very much.

6 That's a very good question because, of  
7 course, compliance with regulatory limits -- it's one  
8 aspect of radiation protection, and Alara principle is the  
9 overarching safety principle which always applies.

10 And from that standpoint, we evaluated all  
11 the options, before starting the refurbishment, from the  
12 risk perspective. We decided that the re-use of the  
13 existing heavy water would be the lower risk scenario.  
14 Because transporting heavy water from Point Lepreau to  
15 Ontario, strictly speaking to the Darlington site, to  
16 tritium removal facility for clean-up of the moderator  
17 water would be a more risky exercise. As you know, those  
18 trucks would have to carry a large volume of heavy water  
19 and the potential for a spill on the way wouldn't be  
20 significant.

21 So taking everything into consideration,  
22 and design provisions, operation provisions in place, we  
23 believe that New Brunswick Power can exercise due  
24 diligence and minimize any exposure of workers to the  
25 extent practicable.

1                   **THE CHAIRMAN:** Anybody else?

2                   Just again, my ignorance, on Bruce A  
3 comment: "Unit 4 is de-rated by two percent to prevent  
4 governor valve oscillation". What is governor valve  
5 oscillation?

6                   **MR. RZENTKOWSKI:** Governor valve is the  
7 main valve which directs the steam in the secondary system  
8 to the turbine. And very often this valve can develop  
9 small oscillations as a result of the logic control  
10 malfunctions and also as a result of so-called fluid  
11 elastic instability, which leads to unstable oscillations  
12 of the valve stem. This is typically the case when  
13 there's a large pressure drop across the valve.

14                   So those are the known problems. Because  
15 of that, the power was lowered because this also led to  
16 lower flows through the valve and less pressure drop  
17 across. As a result, there was no oscillations present in  
18 the secondary system and, therefore, also not in the  
19 primary system.

20                   I see that Frank Saunders ---

21                   **THE CHAIRMAN:** But I guess my point is  
22 somebody decides Unit 4 is a problem, I guess, so you know  
23 that there is a problem in there. Is that my  
24 understanding?

25                   **MR. SAUNDERS:** Frank Saunders, for the

1 record.

2 This has been an issue that's been in the  
3 report for the last few months, so I anticipated you might  
4 ask the question.

5 So let me just give you a little bit of a  
6 history and where it comes -- stems from. What we noted  
7 at Unit 4 was there was a very small oscillation and  
8 pressure in the boiler, about plus or minus 15 KPa, so on  
9 a system that's actually running between, you know, three  
10 and four megapascals. So it's a small little oscillation,  
11 but the oscillation and pressure in the boiler -- of  
12 course temperature and pressure are directly connected, so  
13 it causes a small oscillation in temperature at the  
14 reactor inlet on the P transport side.

15 That's a control variable and has  
16 protections in the system, so oscillations there are  
17 something that we don't desire because it might  
18 accidentally, you know, trip a unit or create a protective  
19 action and so you don't want those kinds of disruptions.

20 So the answer is to back away from it a  
21 little bit so you're not up against the limit.

22 Typically, governor valves do oscillate  
23 slightly. All control functions do. They have small  
24 oscillations.

25 When we started troubleshooting the small

1 pressure changes in the boiler, we did discover or we  
2 determined that, in this case, it was a governor valve  
3 that we thought was causing the problem. And so there's  
4 been several months of troubleshooting to work our way  
5 through this. So we're not kind of ignoring it but  
6 there's only so much you can do to repair it online  
7 because obviously it's a high pressure system that's  
8 operating. You don't want to be changing the control  
9 system in dramatic ways.

10 But we have done a significant amount of  
11 troubleshooting around it. It's not actually a safety  
12 issue. It's more of an economic issue in the sense that,  
13 you know, we don't want to put the limit close enough or  
14 accidentally take the reactor offline and put it through a  
15 transient.

16 So that's why we back the power off a  
17 little bit. It's really related to making sure you're not  
18 going to accidentally, you know, bump a limit.

19 **THE CHAIRMAN:** But would it be fixed? I  
20 mean, is it a temporary de-rating? Is that the way it  
21 works? The next time in outage you will replace the  
22 valve?

23 **MR. SAUNDERS:** Yeah, they've been  
24 developing fixes and trying, you know, some moderate fixes  
25 online that we can do safely, but in the end of the day,

1 we will fix it when we shut down. And it's really just --  
2 you know, just about the fine control on that system.

3 So, you know, engineering and the people  
4 are actively engaged in the troubleshooting and we have  
5 equipment hooked up to look at it very closely.

6 So not particularly a safety issue but in  
7 the end of the day, if we don't fix it online, we'll fix  
8 it the next time we shut down.

9 **THE CHAIRMAN:** While I've got you here,  
10 I've got another, for both -- a question. It's more an  
11 editorial comment on the last -- on Unit 8, is "shut down  
12 to repair a routine leak."

13 You know, in our business here, there is no  
14 "routine leak". I don't understand; what is a routine  
15 leak?

16 **MR. SAUNDERS:** I think the proper answer  
17 there was probably a small leak. And the routine comes is  
18 on these feeders we have small instrument lines that come  
19 off and provide pressure and other indication to the  
20 reactor and occasionally we do get a leak on these  
21 instrument lines. They are a small stainless steel tube  
22 about five-eighths of an inch in diameter. I'm trying to  
23 remember the exact size. But they're relatively small and  
24 occasionally you'll get a small leak in those but of  
25 course that puts B20 into our reactor vault. And in this

1 case, we seen the leak was there, it clearly wasn't a  
2 closure plug, which is another way that that can happen,  
3 so we shut down to fix the leak.

4 So, in a sense, it's routine, in that when  
5 we get leaks that's usually what the leak is. It doesn't  
6 happen every day. They are very small leaks but you don't  
7 want all that vapour in your reactor vault so you shut  
8 down and fix it.

9 So we actually advanced the outage that was  
10 planned for this fall to -- I guess we started in -- I  
11 can't remember if we started in January or February, but  
12 primarily to fix that so we don't have to tolerate it and  
13 do a number of other things.

14 **THE CHAIRMAN:** Staff, do you want to  
15 comment?

16 **MR. RZENTKOWSKI:** Yes, I would like to  
17 explain it because, of course, I have to take the  
18 responsibility for putting this word "routine" into the  
19 status report.

20 And what I meant by that is that a routine  
21 leak is less than the design leak in the heat transport  
22 system. The design leak is typically about 20 kilograms  
23 per minute and operating leak -- or operating limit is  
24 about 100 kilograms per minute.

25 So in this particular case, the leak was --

1 when it was reported to us, was less than the design leak,  
2 so less than 20 kilograms per minute.

3 **THE CHAIRMAN:** You've just opened up a  
4 whole new world for me. What do you mean "design leak"?  
5 So that means that if there's a leak below 20 kilograms,  
6 you sort of ignore it?

7 **MR. RZENTKOWSKI:** No, typically those leaks  
8 are into the collection system, so the source discharge is  
9 very well known. In the collection system, it's also well  
10 controlled.

11 So from that standpoint, there is  
12 absolutely no impact on operating staff at the facility.

13 What I am saying by the "design leak" is  
14 that the station or the reactor is designed to control the  
15 leak of that size and designed to protect the workers  
16 against any radiation exposure.

17 **THE CHAIRMAN:** Okay.

18 Dr. Barriault?

19 **MEMBER BARRIAULT:** Since we're on editorial  
20 comments, on Pickering B, "Unit 6 is operating at 99  
21 percent of full power." And under "Comments", it's "shut  
22 down." Which is it? You can't have it both ways.

23 **MR. RZENTKOWSKI:** Yes. This is coming back  
24 to Unit 6, Pickering B, yes?

25 **MEMBER BARRIAULT:** I'm sorry, yes, coming

1 back to the same place.

2 **MR. RZENTKOWSKI:** Yes.

3 **MEMBER BARRIAULT:** I'm assuming it's shut  
4 down; it's not operating at 98 percent?

5 **MR. RZENTKOWSKI:** Yes, Unit -- no, Unit 6  
6 is right now at 99 percent full power because it has  
7 restarted from the forced outage. The problem has been  
8 identified, repaired, and the unit is returning to full  
9 power operation.

10 **MEMBER BARRIAULT:** Okay. Okay, so it's  
11 already restarted then?

12 **MR. RZENTKOWSKI:** Yes. Yes, it started.

13 **MEMBER BARRIAULT:** Okay. Thank you.

14 **MR. RZENTKOWSKI:** And I would like to take  
15 this opportunity and provide an answer to your previous  
16 question ---

17 **MEMBER BARRIAULT:** Thank you.

18 **MR. RZENTKOWSKI:** --- regarding the over  
19 speed protection.

20 **MEMBER BARRIAULT:** Yes. Yes, please.

21 **MR. RZENTKOWSKI:** The Pickering turbines  
22 have two fully redundant over speed trip devices that  
23 trigger shutdown of the turbine in the event that turbine  
24 speed exceeds 110 percent of normal speed.

25 **MEMBER BARRIAULT:** Okay, so ---

1                   **MR. RZENTKOWSKI:** And the normal speed is  
2                   60 hertz or 1,800 RPMs. These trip devices are routinely  
3                   tested to ensure that they are functioning properly. And  
4                   during the routine testing on January 29<sup>th</sup>, one of these  
5                   two trip devices failed on Unit 6. So this was the root  
6                   cause of the shutdown of the Unit.

7                   **MEMBER BARRIAULT:** And it's back in  
8                   operation now?

9                   **MR. RZENTKOWSKI:** It's back to operation  
10                  right now.

11                  **MEMBER BARRIAULT:** Thank you.

12                  **MR. RZENTKOWSKI:** It's at 99 percent power,  
13                  so it's effectively full power operation.

14                  **MEMBER BARRIAULT:** Thank you, Mr. Chairman.

15                  **THE CHAIRMAN:** Anything else?

16                  Okay. Thank you.

17                  We shall move now to Early Notification  
18                  Reports. The first one is with respect to an incident  
19                  declared due to tritium alarm at Bruce A Auxiliary  
20                  Services Building, as outlined at CMD 12-M8.

21                  Mr. Rzentkowski, the floor is still yours.

22

23                  **4.2 Early Notification Reports**

24

25                  **4.2.1 - 12-M8**

1       **Incident declared due to tritium**  
2       **alarm at Bruce A Auxiliary**  
3       **Services Building**  
4

5                   **MR. RZENTKOWSKI:** Thank you very much, Mr.  
6       President.

7                   I would like to provide a very short  
8       description of this event to set up the context for the  
9       follow-up discussion.

10                  On January 23<sup>rd</sup>, 2012, a tanker truck  
11       carrying heavy water from Bruce B to the Bruce A Auxiliary  
12       Services Building alarmed the tritium detectors in its  
13       final destination. Response procedures were triggered  
14       immediately and personnel in the building were evacuated.  
15       Also the exclusion zone was quickly established and, as a  
16       precautionary measure, site security closed all roads that  
17       the tanker truck had travelled.

18                  There was a low risk of low level exposure  
19       for some Bruce Power staff who were in the area at the  
20       time of the event. Bruce Power identified 13 individuals  
21       who were exposed.

22                  However, the radiological consequences were  
23       insignificant. Maximum dose by one individual was about  
24       .05 millisieverts or .1 percent of the annual limit.

25                  Furthermore, Bruce Power verified that

1           there was no measurable amount of heavy water loss between  
2           Bruce A and Bruce B stations. The heavy water tanker has  
3           been quarantined until an inspection and any necessary  
4           repairs are completed.

5                         While the cause is under investigation,  
6           initial indications are that an over-pressure protection  
7           device on the top surface of the tanker opened.

8                         There will be a root cause investigation of  
9           the incident and adequate corrective actions as necessary.

10                        CNSC staff is expecting a follow-up to the  
11           preliminary report once the root cause has been  
12           determined. This detailed event report is expected in  
13           approximately 45 days from the time of the event. Thank  
14           you.

15                        **THE CHAIRMAN:** Any comments from Bruce  
16           Power?

17                        **MR. SAUNDERS:** Yeah, just to provide a  
18           little bit of background as to why we moved the heavy-  
19           water around on site in the first place, we have a D2O  
20           Management Program on site because the heavy water is a  
21           pretty integral part of reactor operation and so we store  
22           and move heavy water around the site as necessary to look  
23           after it.

24                        In this case, Bruce B was in an outage.  
25           They needed to drain their tanks down a little so we were

1 moving the water to Bruce A for that purpose.

2 These trucks look very much like the big  
3 shiny milk trucks you see out on the country roads; it's  
4 the same sort of arrangement. A well-designed truck,  
5 actually, no -- there's no drains or valves on the bottom  
6 of these. All the loading and unloading is from the top  
7 and we typically fill them fairly full.

8 The device that Staff mentioned is actually  
9 a rupture disk. It's about two inches. It's a quite  
10 small rupture disk and it's really just there to prevent  
11 the tank itself from failing should, you know, for some  
12 reason, it'd get over-pressurized either during filling or  
13 -- or, you know, in an accident where there was a fire or  
14 something like that so ...

15 And these are covered under our licence.  
16 It's a routine -- I'd say fairly routine activity we do;  
17 not every day but not infrequent either.

18 So that was the reason. So it wasn't  
19 unusual in that sense.

20 When we detected it in Bruce A, we -- we  
21 didn't know initially, it was a bit of a wet day and so it  
22 wasn't apparently obvious whether there was a leak or not  
23 and, just in case, we decided to close the site roads and  
24 do the check.

25 So we didn't really think that we had

1        actually lost heavy water because those relief valves are  
2        right at the top of the tanker.  It normally wouldn't leak  
3        anyway.

4                    But -- but we wanted to be cautious so we  
5        took the cautious and went out and checked and we did four  
6        sets of readings, actually, ending about February 3<sup>rd</sup> and  
7        we didn't detect any -- any tritium from this truck across  
8        the site.

9                    The one place that we found some tritium  
10       and which we think is why the alarms went off when they  
11       backed into Bruce A was, at the drain that enters the  
12       Ancillary Services building at Bruce A, it's actually a  
13       ramp with a slope so the truck was -- had an angle as it  
14       went down the slope.

15                   This relief valve is actually -- or, sorry,  
16       rupture disk is actually at -- towards the back of the  
17       truck so, from what we can see, the -- that's when the  
18       actual leak into the pipe occurred and, of course, when  
19       they backed into the bay, there's a tritium monitor there  
20       which picked it up very promptly which is why there was no  
21       staff dosing.

22                   In fact, the Health physics assumes that  
23       most of this -- these were Rad workers that were actually  
24       tested here so it's actually impossible to tell whether  
25       that dose came from -- came from the tritium truck or just

1 from their normal work activities.

2 And, of course, that drain into the ASB  
3 actually drains into active draining so -- so our  
4 assumption is that that's actually where the -- where the  
5 leak occurred given that we couldn't find it anywhere  
6 else.

7 So a general background if that's helpful.

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

9 Mr. Tolgyesi?

10 **MEMBER TOLGYESI:** Merci, monsieur le  
11 président.

12 Did you observe any radiation or?

13 **MR. SAUNDERS:** No, the other thing, of  
14 course, is this was fairly -- this was moderated water.  
15 By chance, it was -- it's very clean so the only -- the  
16 only material in it is the tritium. It's about five and a  
17 half curies.

18 We did soil samples and puddle samples  
19 across site and we couldn't find any elevated tritium in  
20 those samples except for this one sample in the drain at  
21 the ASB that I mentioned.

22 **THE CHAIRMAN:** Dr. McDill?

23 **MEMBER MCDILL:** What are the plans going  
24 forward? Are you going to perhaps not fill the trucks  
25 quite so full in future?

1                   You did comment that you fill them "pretty  
2 full" I think were your words.

3                   **MR. SAUNDERS:** Well, we fill them up to,  
4 yeah, about 90 percent which -- it actually leaves a fair  
5 bit of room and I think I may leave that to the  
6 investigation to look at it and make some decisions.

7                   We don't quite understand why the rupture  
8 disk failed. There was no pressure that should have  
9 caused it to fail so -- so we need to understand it a  
10 little better. So they're doing -- they're doing that  
11 work to understand it and, then, we'll make the decisions  
12 to what we do.

13                  **MEMBER McDILL:** How many trucks and how  
14 many trips, sort of, over a one-year period?

15                  **MR. SAUNDERS:** We currently use two trucks  
16 and the trips will vary, obviously, a few more these days  
17 because we're re-starting Unit 1-2 so we're moving some  
18 water around to do that.

19                  But, on average, I would say we probably  
20 don't ship more than -- more than four or five times a  
21 year on a normal operating environment. It's usually  
22 driven by something like this, an outage that requires us  
23 to move the water.

24                  We also do ship water to Darlington as it  
25 came up a while ago for detritiation but that's done

1 through a -- through a different package that's -- that we  
2 use for transportation of dangerous goods.

3 **MEMBER McDILL:** And it wasn't particularly  
4 cold that day?

5 What's the rupture disk made of? Is it a  
6 -- polymeric material or is it a thin steel or a thin  
7 copper or?

8 **MR. SAUNDERS:** It's a metal and I don't  
9 know exactly what the metal is.

10 It's your typical kind of two-stage, a  
11 metal that has a bit of a -- inscription on it with a  
12 little bit of a hammer that breaks it when the pressure  
13 goes up.

14 A pretty standard thing that you would find  
15 on any rupture disk.

16 **MEMBER McDILL:** Thank you.

17 Do staff have anything to add?

18 **MR. RZENTKOWSKI:** No, we have nothing to  
19 add.

20 **THE CHAIRMAN:** Monsieur Harvey?  
21 Dr. Barriault?

22 **MEMBER BARRIAULT:** Just a brief question:  
23 Is there any chance that this disk may have been ruptured  
24 before?

25 This was just the continuation of the same

1 process or is it checked at every time that the truck goes  
2 out?

3 **MR. SAUNDERS:** It -- because, actually, we  
4 use pressure to unload this truck -- as I said, we don't  
5 take the water off from the bottom, it comes from the top  
6 -- so the way we actually unload it is with a standpipe in  
7 the truck and then we pressurize it.

8 So the disk had to be in place otherwise we  
9 wouldn't have been able to load and unload the truck.

10 So we know that failure occurred between  
11 the loading operation at Bruce B and arrival at Bruce A.  
12 We're just not quite sure what caused the failure.

13 **MEMBER BARRIAULT:** Do we know what kind of  
14 pressure that you put in this tank under to extract the  
15 heavy water?

16 **MR. SAUNDERS:** Yeah, it's relatively low.

17 I don't know the exact number off the top  
18 of my head but it would be -- it would be less than the  
19 sort of 15 psi; the rupture disk is 30.

20 And, of course, the tank passes an  
21 inspection and we do actually -- they are tritium monitors  
22 at Bruce B as well and we actually do a check with a  
23 handheld monitor.

24 So if it was broke at Bruce B, we should  
25 have seen it. So we checked all those records and there's

1 no indication that it was broke.

2 **MEMBER BARRIAULT:** Thank you.

3 Thank you, Mr. Chair.

4 **THE CHAIRMAN:** Ms. Velshi?

5 **MEMBER VELSHI:** What's the alarm at that  
6 point? It is just anything above background or is it a  
7 high-level?

8 Like, what's the worst case of how much  
9 spill you could have had?

10 **MR. SAUNDERS:** The alarm site at 1 -- 1 MPC  
11 which is, you know, for those uninitiated, is the exposure  
12 limit that you can -- you can work for 2000 hours a year  
13 and not exceed the maximum dose.

14 So the alarm is actually set very low and  
15 the reason for that in this area, of course, the reason  
16 the alarm is there in the first place is we do transfer  
17 water in and out of those bays so -- so that the reason  
18 that the alarm is there for this kind of purpose.

19 So it's set low and, when it goes off, it's  
20 unusual so -- so people react quite quickly to it.

21 And you've seen the result in the dose so  
22 -- so the reaction inside the station, I would say, was  
23 quite appropriate to the event.

24 **THE CHAIRMAN:** I'm interested in the public  
25 reaction.

1           You know, when you all of a sudden evacuate  
2 staff and it always seems to be a big deal; right? I  
3 mean, everybody from -- who become aware consider it to be  
4 so.

5           What do you do to sort of explain to the  
6 outside world who -- you know, it got picked up, I think,  
7 by the press, if memory serves right, as an issue.

8           So what do you do on the public information  
9 front?

10           **MR. SAUNDERS:** Yeah, in this case, we did  
11 post some information on this so people could see it.

12           We, of course, asked -- answered the  
13 questions for anybody that called.

14           Yeah, whenever you close roads on site and,  
15 of course, people are suspicious that you're doing it for  
16 some dramatic reason so it actually -- I think it was  
17 about 15 minutes before we got the call from the local  
18 paper. So it wasn't -- it wasn't a very long lapse.

19           So we spent time talking to the various  
20 papers making sure they understood it and we posted the  
21 thing on site so -- and we haven't actually had any  
22 further inquiries. It seems to have been fairly well  
23 understood at that point so ...

24           And I think most people understand that we  
25 will react in a fairly cautious manner to events and --

1 and take actions even when the risk is not there.

2 If it's undetermined like it was in this  
3 case, we will assume it's there and, then, back away from  
4 it later.

5 **THE CHAIRMAN:** Okay.

6 Monsieur Harvey?

7 **MEMBER HARVEY:** Just, your -- the last  
8 sentence here: "a detailed event report is expected  
9 approximately in 45 days", what is the nature of that  
10 report?

11 I suppose you hope to find the cause and  
12 what will be done to -- to correct it but, if they don't  
13 find it, what's the future?

14 **MR. RZENTKOWSKI:** The investigation is in  
15 progress and we really have to see what would be the  
16 conclusion of the investigation.

17 If they don't find any root cause behind  
18 that incident, then probably we will have to look at the  
19 design of the track, in particular the over protection  
20 device or maybe even request Bruce Power to transport  
21 lower volume of the heavy water in those transport tracks.

22 So there's definitely many options and we  
23 will have to revisit the design of the track and also  
24 revisit the operating procedure for transporting heavy  
25 water at this site.

1                   **MEMBER HARVEY:** Want to comment?

2                   **MR. SAUNDERS:** Yeah, I would say that you  
3 -- I don't think you need to be too concerned, we don't  
4 really want to repeat this event, it caused a fair -- it  
5 caused a fair disruption for what was a fairly small  
6 thing. And so we will be very thorough in our own case of  
7 understanding why this happened and if need be, making  
8 design changes or possibly changing packages.

9                   Like say we do have a TDO package, it's not  
10 quite as convenient, doesn't hold quite as much water as  
11 these will but that's all being looked at as part of the  
12 investigation and, you know, perhaps it's time that we  
13 changed our method so we'll have a look.

14                   **THE CHAIRMAN:** Thank you.

15                   The next report is with respect to partial  
16 loss of Class III and Class IV power to Unit O at Bruce A  
17 Nuclear Generating Station as outlined in CMD 12.M10.

18                   And Mr. Rzentkowski and Mr. Saunders,  
19 you're still on deck. Go ahead.

20

21                   **4.2.2 - 12.M10**

22                   **Bruce Power:**

23                   **Bruce A Partial Loss**

24                   **of Class III and Class IV**

25                   **Power to Unit O**

1

2

**MR. RZENTKOWSKI:** Thank you very much Mr. President.

3

4

As before I will open up with a short description of the event and then we'll start the discussion.

5

6

7

On February 8, 2012 an electrical trip occurred during the conduct on a scheduled test that resulted in a partial loss of Class IV and Class III power.

10

11

Operators quickly took action to connect an alternate supply of power. At no time did the main control room lose power or the ability to communicate outside of the station. The operating units were not affected.

12

13

14

15

16

Bruce Power determined that this was a reportable event in accordance with the Provincial Nuclear Emergency Plan. Notification to the Provincial Emergency Operations Centre and the CNSC were completed as required.

17

18

19

20

This event did not result in any impact on workers or public health and safety. There was a short term partial impairment of two special safety systems, that is containment and emergency coolant injection.

21

22

23

24

These systems were capable of performing their function at all times. There was however only a

25

1 marginal reduction in their effectiveness below design  
2 intent for the time period of approximately one hour.

3 While the cause is still under  
4 investigation, it is suspected that an equipment  
5 malfunction caused an electrical bus to fail. At this  
6 time an investigation of equipment malfunction is in  
7 progress. Further corrective actions will be taken as a  
8 result of the investigation.

9 CNSC staff is expecting a detailed event  
10 report once the root cause has been determined. These  
11 detailed event reports -- this detailed event report is  
12 expected in approximately 45 days.

13 Thank you Mr. Chairman.

14 **THE CHAIRMAN:** Thank you.

15 Mr. Saunders?

16 **MR. SAUNDERS:** Yeah, again just a little  
17 background. So ---

18 **THE CHAIRMAN:** You've got to identify  
19 yourself.

20 **MR. SAUNDERS:** Oh, sorry, I forgot. Frank  
21 Saunders, for the record.

22 These tests are what we call routine,  
23 they're called safety system tests, we do them very  
24 frequently.

25 The purpose of this test in the station is

1 that the electrical buses have multiple ways of supplies  
2 and auto-transfers to make sure that power can be supplied  
3 from different directions. So it tests the redundancy of  
4 your power system.

5 And in this case, it was testing between a  
6 Class IV and a Class III bus and the Class III bus is  
7 actually the standby generators in essence, if you trace  
8 it back to its source and the Class IV bus is your  
9 standard, you know, line -- power that we would all get  
10 off the grid. So we call that Class IV.

11 So in this case, they were doing the test;  
12 the test was progressing. Part of this test issue lock  
13 out some of the auto breakers because otherwise you  
14 wouldn't determine anything, the breakers would just close  
15 and supply the bus from another means.

16 When we were doing that, there was an issue  
17 with the logic on the bus; the logic indicated there was a  
18 fault, the fault tripped the bus open, the auto breakers  
19 were locked out so therefore they didn't engage.

20 So we lost some power to one of the Class  
21 III and Class IV buses.

22 It did cause slight impairments on ECI.  
23 Actually, we've looked at the negative pressure  
24 containment one sense and in reality the circumstances it  
25 was not impaired at the time based on the circumstances

1 but initially we assumed it might have been.

2                   These actually are what you call --  
3 basically reduction and redundancy because now you've lost  
4 one source of power to these and some valves will have to  
5 be closed. So right away, the operators took the manual  
6 actions to take us out of that state and shortly after  
7 that we returned power to those buses anyway.

8                   So that was the most significant bit. The  
9 bigger issue was we lost some lighting and other things,  
10 so we had to stop work in some areas because the Class IV  
11 bus has some lighting panels on it, various things, some  
12 of the external buildings to Bruce A are supplied off of  
13 that as well and on that Class IV bus, we lost some of  
14 those sorts of things.

15                   Probably the biggest one was my -- the  
16 server my Blackberry is on was in that B06 building so I  
17 lost my Blackberry for about three hours, so it caused me  
18 -- it caused me some personal grief.

19                   But overall, the -- you know, the incident  
20 was very short-lived. We did take some time then to  
21 understand what the issue was with the logic because you  
22 don't want to re-power a bus that may have a fault on it.  
23 They eventually found it was a logic error which they  
24 isolated and the next morning, we powered up the initial  
25 bus.

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

2                   Monsieur Tolgyesi?

3                   **MEMBER TOLGYESI:** I have two questions, Mr.  
4                   President.

5                   Is there any other system to compensate the  
6                   unavailability of these two systems?

7                   **MR. SAUNDERS:** Yes and no. They are in  
8                   themselves redundant, right. They are one part of  
9                   multiple buses. So this is Unit 0, so it's a common unit  
10                  in the station and so they are a piece of it but they're  
11                  not the whole Class IV bus or the whole Class III bus.

12                  And like I say, we were able to restore  
13                  power to everything except the one that we thought had the  
14                  fault on it, we didn't obviously restore that until we  
15                  understood what the fault was because that just wouldn't  
16                  have been sensible.

17                  You can move power from one bus to another,  
18                  so you can unload a bus and move it across. So in many  
19                  ways, you can power things within the plant.

20                  However, in some of the Class IV loads, you  
21                  just solve the problem on the bus rather than -- rather  
22                  than put the effort into shifting them.

23                  All the important loads that you would be  
24                  worried about on Class III were immediately moved to a  
25                  different power supply and taken care of.

1                   So yes and no, there's also Class II and  
2 Class I buses as well but it's a -- you know, as you move  
3 through all this it gets fairly complicated to explain  
4 which loads on which bus and why.

5                   But the station is designed with many  
6 redundant power supplies to make sure that essential  
7 safety equipment always has a source of power that it  
8 needs.

9                   **MEMBER TOLGYESI:** And you're saying that  
10 there was a quick action. What are potential consequences  
11 in the event there's a delay for an action, for the  
12 action, if it's a safety consequences potentially,  
13 economic consequences, what?

14                  **MR. SAUNDERS:** Yeah, well the ---

15                  **MEMBER TOLGYESI:** In addition to your  
16 Blackberry.

17                  **MR. SAUNDERS:** The consequences are  
18 measured by the impairment. So in this case, a level 2 or  
19 a level 3 impairment is a fairly low-level impairment.

20                  We have an impairments manual which is part  
21 of our procedures which actually tell us what we have to  
22 do to compensate should any impairment occur.

23                  So -- and level 1 is the highest level of  
24 impairment, level 3, the lowest.

25                  So the consequences with the ECI with one

1 valve open that wouldn't close, there's a chance that some  
2 flow would bypass on that. But it's a relatively small  
3 flow and it's not sort of consequential to the overall  
4 operation of ECI, that's why it's not a level 1  
5 impairment, otherwise it would have been classified  
6 level 1.

7 So you can judge the significance by the  
8 level of the impairment. But the ECI system was still  
9 fully available and able to function. So it's not -- you  
10 know, like say -- it's hard to go into the extensive  
11 detail about how all the impairments are set but there are  
12 very defined actions and requirements that CNSC sets on us  
13 with the impairments.

14 So if the impairment is significant then I  
15 would have to take actions like shutdown or other things.  
16 So it's very -- it's a very prescriptive and defined  
17 system to make sure that any impairment is dealt with  
18 properly.

19 **THE CHAIRMAN:** Thank you.

20 Dr. McDill?

21 **MEMBER McDILL:** How did staff react  
22 throughout this? Everybody was calm? And in terms of  
23 communication, assuming your Blackberry was unfunctional;  
24 can people reach you by radio?

25 **MR. SAUNDERS:** My phone worked but my

1 Blackberry didn't.

2 So -- Frank Saunders, for the record.

3 Yeah, I mean all our normal communication  
4 channels worked just fine. The PA system, the telephones  
5 were working so staff were made aware very quickly.

6 We did -- you know, in the auxiliary  
7 buildings around Bruce A, we did do an early dismissal on  
8 some staff because obviously those buildings didn't have  
9 power and so computers and stuff weren't working, so there  
10 was no point in keeping them there. Some people we moved  
11 over to centre site B10.

12 So you know, the staff reaction was, I  
13 think, pretty typical. You know, we've got a good  
14 communication system, we've got good procedures and we're  
15 pretty fast to instruct people what to do. So I don't  
16 think there was any -- at least I certainly haven't heard  
17 any discord there.

18 **MEMBER McDILL:** So an old PA and a low  
19 voltage telephone were still good to go.

20 **MR. SAUNDERS:** Yeah. Well, all the  
21 telephones work. We didn't take any telephones out.

22 Yeah, I mean, in essence, sometimes the  
23 older technology actually proves to be your best friend.  
24 And in the emergency response reviews we're doing, one of  
25 the things we're looking at is going back to some of that

1 old technology as a backup source in case towers are down  
2 or satellites can't be reached or whatever, and they work  
3 mostly.

4 **MEMBER MCDILL:** It's redundancy, I guess.

5 My next question is once you know the  
6 problem, if it will be communicated to other operators who  
7 have -- this is a common -- unit zero is common to all the  
8 operators, isn't it?

9 **MR. SAUNDERS:** It's common to the multi-  
10 unit station source also and OPG. And yes, the OPEX is a  
11 standard part of our process that we will put it out.

12 **MEMBER MCDILL:** Anything to add from staff?

13 **MR. RZENTKOWSKI:** I have to admit that  
14 there was a little communication problem because normally  
15 we are notified about events like that minutes after it  
16 happens.

17 But in this particular case, because Mr.  
18 Frank Saunders' Blackberry was not functional and at the  
19 same time our site staff supervisor was attending a  
20 certification hearing at Bruce site, there was a little  
21 bit gap of communication, but nevertheless, Bruce Power  
22 placed a call to the CNSC duty officer who was on line and  
23 from the CNSC duty officer we found out about this event.

24 So we found it out probably about four  
25 hours after the event happened. Nevertheless, the site

1 staff was, of course, on the top of that incident and  
2 inspectors were dispatched to investigate and observe  
3 recovery actions.

4 **MEMBER McDILL:** So the delay wasn't  
5 excessive.

6 **MR. RZENTKOWSKI:** The delay in the  
7 information was really with respect to the head office  
8 here in Ottawa, but the site office staff was notified  
9 just minutes after the event happened.

10 How I mentioned, normally we communicate  
11 through the site supervisor or through Mr. Frank Saunders  
12 in a situation like that, but both options were not  
13 available at that time.

14 **MEMBER McDILL:** Thank you, Mr. Chair.

15 **THE CHAIRMAN:** Thank you.

16 Monsieur Harvey?

17 **MEMBER HARVEY:** Merci, monsieur le  
18 président.

19 I was surprised to see in your text that at  
20 no time did the main control room lose power or the  
21 ability to communicate outside the station. I mean, is  
22 there any possibility that could happen or -- because it's  
23 very important.

24 **MR. RZENTKOWSKI:** Because of the redundancy  
25 of the power supply, really, the power cannot be lost to

1 the main control room. It's driven by the batteries in  
2 the event Class IV and Class III power is lost.

3 So in this case, we tested the system and  
4 the system responded as expected as per design.

5 **MEMBER HARVEY:** Maybe the wording could  
6 have been -- well, maybe you should have said that in your  
7 text because here we -- we are concerned because it's like  
8 it could happen. So for the public. if you read that you  
9 say "Oh, this is something we are concerned with".

10 **MR. RZENTKOWSKI:** I understand. My  
11 intention here was simply to say that there was no impact  
12 on the operating units. But yes, it leaves a little bit  
13 unfinished -- it's a little bit unfinished in terms of the  
14 explaining that the redundant systems are there to always  
15 provide power, as required.

16 **MEMBER HARVEY:** Would appreciate to read  
17 the other.

18 **MR. RZENTKOWSKI:** Thank you very much for  
19 this comment.

20 **MEMBER HARVEY:** And the end -- and it is  
21 the same wording in the both events. This detailing in  
22 the report is expected in approximately 40 days -- 45  
23 days. Why approximately?

24 **MR. RZENTKOWSKI:** Approximately 45 days  
25 because that's the maximum time limit required to provide

1 this report. But very often the licensees finish the  
2 investigation sooner than that, so it's very likely that  
3 we may see this report even in two or three weeks from  
4 now.

5 **MEMBER HARVEY:** So it should be a ---

6 **MR. RZENTKOWSKI:** So approximately ---

7 **MEMBER HARVEY:** --- maximum -- a maximum

8 ---

9 **MR. RZENTKOWSKI:** --- at the maximum 45  
10 days.

11 **MEMBER HARVEY:** --- 45 days.

12 **MR. RZENTKOWSKI:** Yes.

13 **MEMBER HARVEY:** Thank you.

14 **THE CHAIRMAN:** Dr. Barriault?

15 **MEMBER BARRIAULT:** Thank you, Mr. Chairman.

16 I guess the question that begs to be  
17 answered in my mind is the fact that is there any time  
18 that the power supply to the cooling pumps, was it ever  
19 jeopardized or was there a possibility that we wouldn't  
20 have a backup system to the cooling pumps?

21 **MR. RZENTKOWSKI:** In this particular case  
22 the power was lost only to Unit 0, so there is no  
23 mechanical equipment there which is credited for either  
24 operation of the plant or protection of key systems.

25 But I may direct this question to Mr. Frank

1           Saunders because he knows better the layout of the plant.

2                       **MR. SAUNDERS:** Frank Saunders, for the  
3 record.

4                       Yes, the Unit 0 provides a common load so  
5 there's common systems there, but none of the operating  
6 things were challenged at all by this, nor was the control  
7 room. None of the safety systems had to react to this.  
8 So the power loss to these busses just didn't supply any  
9 of those loads.

10                      And yes, all those loads have redundant  
11 power supplies. If you're talking the main heat transport  
12 pumps, then if -- you know, if you lose one of those, the  
13 pumps, you know, you'll end up bringing the unit down  
14 because you really -- they're very big loads and you can't  
15 suddenly transfer those loads and jump them around so, of  
16 course, we build them fairly robust without the intent of  
17 that happening.

18                      It's not really a safety issue when you do  
19 that; it's obviously a significant economic penalty  
20 because the unit will come down and you'll have to  
21 restart, which will take a couple of days.

22                      So none of those operating kind of features  
23 were affected at all by this; it was only some of the  
24 common systems that were in Unit 0.

25                      **MEMBER BARRIAULT:** Thank you.

1                   Merci, monsieur le président.

2                   **THE CHAIRMAN:** Ms. Velshi?

3                   **MEMBER VELSHI:** So in the history of our  
4 multi-unit stations, has an event like this ever happened  
5 when we've been conducting scheduled tests?

6                   **MR. RZENTKOWSKI:** We would have to review  
7 our database which contains all the events. We are not in  
8 a position to respond to your question at this point in  
9 time, but we can get back to the Commission maybe later on  
10 today.

11                   **THE CHAIRMAN:** Just piggybacking on this,  
12 you know, to get the Blackberry not to function, I don't  
13 know if you know that in New York in the 9/11 it was the  
14 last system to go down. So I'm very surprised by that,  
15 and I'm looking forward to try to understand exactly why  
16 it went down.

17                   And my question is, did you -- is that a  
18 new system? How old is the system, you know, all this  
19 redundancy, and how often do you check it?

20                   **MR. SAUNDERS:** The electrical system is  
21 part of the original plant design, so yes, an old system.  
22 I don't remember the exact testing frequency. It's pretty  
23 frequent.

24                   Of course, there are a lot of breakers and  
25 different components that need to be tested. I'd have to

1 check the actual frequency of this particular test.

2 The question is to -- you know, do these  
3 tests ever fail; occasionally. Sometimes breakers do fail  
4 and other things and we repair them, and that's why we do  
5 the test, in essence, to detect that, but it's pretty  
6 reliable overall.

7 You know, obviously all these systems have  
8 high reliability targets that we measure and track so that  
9 we know where they're at. We, of course, do significant  
10 preventive maintenance and other things so, you know, it's  
11 not a system that we just sort of test until it -- and  
12 wait for it to fail. We do significant work on these  
13 things, but on occasion you will find the odd failure.

14 As for the Blackberry, it was sort of  
15 unrelated in a way. It just happened that one of the --  
16 one of our local servers, Bruce Power's, was in the B06  
17 building, which is one of the buildings that lost power.  
18 So it has nothing to do with the plant itself other than  
19 the power supply for that particular building came from  
20 Unit 0 at Bruce A, and so when it dropped off, that server  
21 dropped off, and I was unfortunate enough to be on that  
22 server, I guess, so it didn't work. And that's the extent  
23 of my understanding of how the Blackberry works.

24 So any time you do tests, there will be  
25 some potential that you will find some failures, and of

1 course, we track, measure and monitor all of those so we  
2 can tell you what the failure frequency is, how often,  
3 what types of components, and when. And that all fits  
4 into our maintenance and our preventative maintenance  
5 program.

6 So in a failure like this, this will now go  
7 back and look at the system, look at the components, look  
8 at similar systems -- similar components on other systems  
9 and determine if there's something we need to do to make  
10 sure we don't have that kind of thing in the future.

11 **THE CHAIRMAN:** Okay. Thank you.

12 Anything else?

13 Thank you very much.

14 The next early notification report is  
15 concerning the over-exposure to an operator at SGS Canada  
16 Inc. as outlined in CMD 12-M9.

17 And I understand we have a representative  
18 from SGS Canada who are joining us via teleconference from  
19 three different locations, so this is a good test of our  
20 technology. And let me start.

21 Our people from Lakefield, are you on line?

22 **MR. LE LAGADEC:** That's correct, we are on  
23 line. This is Hervé Le Lagadec.

24 **THE CHAIRMAN:** Thank you.

25 **MR. LE LAGADEC:** And Jack Carlos (phon.)

1 and Dean Rollwagen.

2 **THE CHAIRMAN:** Sorry. This was in  
3 Montreal?

4 **MR. HANNA:** Montreal, yes. Douglas Hanna  
5 is here and Frank McQuade.

6 **THE CHAIRMAN:** Thank you.  
7 De Québec, est-ce que vous êtes là?

8 **M. ROBILLARD:** Oui, Patrick Robillard de  
9 Québec.

10 **LE PRÉSIDENT:** Bienvenu. Merci.  
11 So we'll get back to you once we've heard  
12 from Monsieur Régimbald.

13 Vas-y, s'il vous plaît.

14

15 **4.2.3 - 12-M9**

16 **SGS Canada Inc.:**

17 **Overexposure to Operator**

18 **during Emergency Source Retrieval**

19 **of Industrial Radiography Source**

20

21 **M. RÉGIMBALD:** Merci, monsieur le  
22 président, et bonjour, et bonjour aux membres de la  
23 commission.

24 Mon nom est André Régimbald. Je suis le  
25 directeur général responsable de la réglementation des

1 substances nucléaires.

2 With me today for this presentation is Mr.  
3 Peter Fundarek, Director of Nuclear Substance and  
4 Radiation Device Licensing; monsieur Sylvain Faille,  
5 directeur des autorisations de transport et du soutien  
6 stratégique; monsieur Luc Jobin, inspecteur de notre  
7 bureau d'Ottawa; Mr. Miro Petrovich, Licensing Specialist  
8 in Nuclear Substance and Radiation Device Licensing; and  
9 Ms. Melanie Rickard, Dosimetry Specialist with the  
10 Radiation and Health Sciences Division.

11 This Early Notification Report is submitted  
12 in relation to an incident involving industrial  
13 radiography operation conducted by SGS Canada that  
14 occurred in Quebec City on January 20<sup>th</sup>, 2012.

15 At this point, I will provide you with a  
16 brief overview of the nature and the circumstances of the  
17 incident and the ensuing consequences noted so far.

18 So, as previously mentioned, SGS Canada was  
19 conducting radiography operations at a location in Quebec  
20 City on January 20<sup>th</sup>, during which the radioactive seal  
21 source assembly containing 2.6 terabecquerels of iridium  
22 192 became disconnected from the operating cable within  
23 the guide tube of the radiography device and remained in  
24 the exposed position.

25 The disconnection occurred due to equipment

1 failure, the cause of which is still under investigation  
2 by the licensee.

3 At that moment, the device operator, who is  
4 a certified exposure device operator, along with other  
5 staff from the licensee, immediately followed the  
6 licensee's emergency procedures to safely retrieve the  
7 seal source assembly inside the camera, but experienced  
8 difficulties in returning it to the fully-shielded  
9 position inside the exposure device.

10 This occurred as a result of the flexing of  
11 the seal source assembly inside the exposure device tube.

12 In an attempt to help return the seal  
13 source assembly to the fully-shielded position, the  
14 operator pushed directly on the seal source assembly with  
15 his finger, his index finger, for an estimated maximum of  
16 one second.

17 Using other tools and rods, the licensee  
18 staff was eventually successful in returning the seal  
19 source assembly to the fully-shielded position.

20 So following the incident, the licensee  
21 removed the operator from all work involving further  
22 exposure to radiation and the operator remains employed  
23 with the licensee. The licensee has arranged for the  
24 operator to receive medical attention as needed.

25 The licensee reports that the operator has

1 not observed any medical symptoms or other reaction in his  
2 finger in relation to the incident, and the licensee  
3 continues to follow up on his care.

4 As noted, the cause of the equipment  
5 failure remains under investigation by the licensee.

6 At this time, I would like to turn the  
7 microphone over to Mr. Fundarek, who will provide  
8 additional information on the matter.

9 **MR. FUNDAREK:** Good morning Members of the  
10 Commission. My name is Peter Fundarek.

11 So the licensee that we have, SGS Canada,  
12 has a total of five licences with the CNSC. The one  
13 that's the subject for this Early Notification Report is  
14 the radiography operations licence, which is indicated  
15 with the H, meaning high risk.

16 And then there's licences for portable  
17 gauges, fixed gauges and laboratory research involving  
18 open source material. Those are all listed as medium risk  
19 by the Ms, and then an x-ray fluorescence licence for --  
20 principally for metal detection is a low-risk licence.

21 So they first became a licensee in 1990 as  
22 Xper Inc. and then, through subsequent changes in  
23 companies, is now listed as SGS Canada Incorporated.

24 The radiography operations are conducted at  
25 three locations across Canada out of three basic

1 operational locations, Montreal, Jonquière and Quebec  
2 City. There's 10 -- the device listing shows 10 exposure  
3 devices, but the inventory since this slide presentation  
4 was developed, the inventory's been updated so it's  
5 actually nine exposure devices.

6 One of those devices is a Delta 880 device,  
7 and that is the subject unit for the Early Event  
8 Notification.

9 The compliance history for this location,  
10 the Quebec City location out of which the operator was  
11 operating, is very good, two years both met expectations.  
12 There was one minor issue that caused the report to be  
13 below expectations, and that was a documentation error on  
14 their transport documents, but the licensee quickly  
15 resolved that matter. And so they were found to be in  
16 full compliance following that correction.

17 The exposure device itself is a QSA Tech  
18 Global 880 Delta device. The serial number in this unit  
19 was D65 -- 6456, and it's certified by the CNSC. Last  
20 certification was last renewed in 2011.

21 The source assembly is noted as Design  
22 A424-9, and it has a maximum activity of 55 terabecquerels  
23 -- sorry, 5.5 terabecquerels of iridium 192.

24 The sealed source assembly, you can see  
25 there there's an exploded view of the actual head of the

1 sealed source assembly showing the small iridium wafers  
2 that go inside and, as you can also see, it's a double  
3 encapsulation, so the iridium wafers are held by the  
4 spring inside the inner capsule and then that's put inside  
5 the outer capsule. And all of those are sealed shut and  
6 then put on the end of the Teleflex cable which is  
7 commonly referred to as a pigtail. And that's  
8 approximately 19 centimetres long in total.

9 This unit had about 2.6 terabecquerels of  
10 iridium 192 in it at the time of the incident.

11 So the location of the incident was at a  
12 non-licensed location. It's where the licensee is  
13 actually performing work for a third party. This is  
14 common in industrial radiography situations.

15 The control of the site and the location is  
16 under the care of the licensee conducting the work, but  
17 they are working at a third party's location.

18 And when this happened on January 20<sup>th</sup>,  
19 there was the operator, who is a certified exposure device  
20 operator, and he was certified in March of 2007 by the  
21 CNSC, and he was assisted by two assistants at the time  
22 who were not certified exposure device operators.

23 During the event, the source became  
24 disconnected from the cable that normally propels it up  
25 and down or in and out of the exposure device, and the

1 operator contacted the licensee's radiation protection  
2 staff to gain assistance.

3 Source retrieval operations are -- we  
4 require that they have somebody specially trained in  
5 source retrieval operations to actually do that work, and  
6 so that person was called to the site and they did  
7 respond. And additional staff from the licensee also  
8 responded at the time. And they undertook the operations  
9 to try and return the source to the shielded state.

10 During this time, they tried various things  
11 to get the source back in. Because of the disconnection,  
12 they can't go up to the source directly, for the most  
13 part, to return it to the shielded position because it is  
14 actually enclosed for the most part.

15 At one point there, the enclosure did open  
16 up. The collimator unit that's at the head of the device  
17 broke off, and the source became outside the unit itself.

18 Now, all of these operations are conducted  
19 remotely, so they used remote handling devices like long  
20 tongs to pick up the source and try and put it back in the  
21 device. And in -- and then push it.

22 They were able to do that and fairly  
23 successful in getting it down into the device. But  
24 because of the flexing of the tube -- sorry, of the  
25 pigtail within the tube inside the exposure device, they

1 weren't actually able to supply enough force to push the  
2 device -- or the source back into the fully-shielded  
3 position.

4                   And it was during one of these attempts  
5 where the operator was pushing on it with a rod to try and  
6 get the source back down that, instinctively, he just  
7 pressed on it with his finger just to push it in all the  
8 way.

9                   Immediately realizing his error, he backed  
10 off and they used other methods to finally return the  
11 source to the fully-shielded position and then return the  
12 device.

13                   The device has been inspected and  
14 evaluated, and it's fully functional. And it was after  
15 the incident was over that they found the cause of the  
16 disconnect which was a failure on the Teleflex cable with  
17 the operating cable.

18                   So the exposure to -- the exposure to the  
19 worker himself, the whole body electronic dosimeter  
20 recorded 0.67 millisieverts to the whole body. And that's  
21 also supported by the TLD, which he was wearing during  
22 this two-year -- sorry, two-week period, which was 1.05  
23 millisieverts. And these are all well below the exposure  
24 limit for nuclear energy workers of 50 millisieverts per  
25 year.

1           The dose to the finger, the one square  
2 centimetre of tissue at the tip of the finger was  
3 calculated to be 4.4 sieverts, which of course is  
4 significantly above the 500 millisievert limit for an  
5 extremity exposure as per the RP Regulations.

6           Now, this dose limit -- or the dose  
7 evaluation to the finger was confirmed by CNSC staff using  
8 the information from the licensee.

9           So CNSC is continuing to follow up on this.  
10 We have received a very comprehensive report from the  
11 licensee on the 10<sup>th</sup> of February, and we are continuing to  
12 evaluate that report.

13           We're going to review the initiating  
14 situation and any other contributing factors to the  
15 incident. We're going to be following up with the  
16 licensee to make sure that any actions that they take in  
17 respect to this incident are effective and followed  
18 through.

19           And we will continue to follow up with the  
20 affected operator, but we're just in the process now of  
21 conducting a fulsome review of the investigation report  
22 supplied by the licensee on the 10<sup>th</sup> of February.

23           So in summary, we had an exposure dose to  
24 the extremities of 4.4 sieverts. There's no medical  
25 indications to date. The operator has noticed no

1 difference in his fingers, and we will come back to the  
2 Commission at a later date to supply further information  
3 once our analysis of the event is complete.

4 And I'll turn the microphone back over to  
5 Mr. Régimbald.

6 Thank you.

7 **MR. RÉGIMBALD:** Thank you, Mr. Fundarek.

8 Mesdames et messieurs, nous avons préparé  
9 une démonstration de l'appareil en question et de son  
10 fonctionnement. Si vous avez du temps, nous pouvons  
11 passer à travers la présentation ou simplement être  
12 disponibles pour répondre à vos questions en anglais ou en  
13 français. Merci.

14 **THE CHAIRMAN:** Go right ahead. I was  
15 hoping that instead of describe -- trying to describe it,  
16 you'd actually show us.

17 **MR. RÉGIMBALD:** Yes, we will have M. Luc  
18 Jobin, qui est l'inspecteur de notre bureau d'Ottawa et M.  
19 Miro Petrovic, qui est notre spécialiste des permis.

20 Alors, ça va prendre juste quelques minutes  
21 pour préparer les appareils.

22 **MR. PETROVIC:** Hello, my name is Miro  
23 Petrovic.

24 So this is the exact camera that -- the  
25 same model of camera that was used in this incident. It

1 consists of an exposure device. This is the typical head-  
2 hose used, the output side of the camera and the sealed  
3 source would slide up to here.

4 This here is the control cable assembly,  
5 and this is actually the component that broke, here on the  
6 end. So typically, what they do to connect the camera up  
7 is they would unlock it, and they would put it into the  
8 connect mode.

9 This removes the cover and prior to  
10 connecting this connector assembly, they have to do some  
11 checks to make sure that it's still within tolerance,  
12 okay.

13 So they put the connector together, check  
14 it and then they continue by connecting -- okay. So this  
15 is the control side and what they have to do is they would  
16 rotate the handle and that would expose the source.

17 But before they do that, there is a safety  
18 mechanism in place where they cannot start cranking until,  
19 number one, they have to open this component here, it's a  
20 little cover plate.

21 They have to insert the bayonet fitting.  
22 Okay, once they have that assembled -- in this particular  
23 incident, they had a collimator connected directly to the  
24 device. So they did not use this, but you have to have  
25 something on the end of it for the mechanism to work.

1           Otherwise, it will not come out.

2                       **THE CHAIRMAN:**   So far -- the source is  
3 shielded?

4                       **MR. PETROVIC:**   Yes, it is in the locked and  
5 fully shielded position.

6                       **THE CHAIRMAN:**   Okay.

7                       **MR. PETROVIC:**   Okay.  So once they have  
8 their -- let's pretend there's a collimator here.  A  
9 collimator is just a shielding component which provides  
10 radiation in a focused direction.

11                      Okay, so the camera is hooked up now.

12                      **THE CHAIRMAN:**   What do you use -- what are  
13 you trying to do?  What are you trying to measure?

14                      **MR. PETROVIC:**   What you're doing is you're  
15 taking the end tube here, and let's say if this was a  
16 pipe, you would place it to a particular location.  You  
17 would put film on the back of the pipe and basically you  
18 would be gamma -- giving it a dose, and you would get a  
19 film off it after.  You're looking for internal defects in  
20 welds.

21                      **THE CHAIRMAN:**   So in that case, what were  
22 they measuring, also pipes?

23                      **MR. PETROVIC:**   They were working on pipes,  
24 yes.

25                      **THE CHAIRMAN:**   Is it the same kind of

1 device you use in the oilfield?

2 **MR. PETROVIC:** Yes, sir.

3 **MEMBER HARVEY:** But when you do that, can  
4 you hold the thing like that ---

5 **MR. PETROVIC:** No.

6 **MEMBER HARVEY:** --- just beside the pipe?  
7 No, I suppose no.

8 **MR. PETROVIC:** No, you fix it to the pipe  
9 and then -- in this particular incident, they had a 35-  
10 foot crank cable. Okay, so that brings the operator well  
11 away from the high-level ---

12 **THE CHAIRMAN:** And what do they do; they  
13 tape it? How do they ---

14 **MR. PETROVIC:** They use a bungee; they use  
15 all kinds of different stuff to hold it here.

16 They also have magnet stands that can  
17 actually hold the source at a particular distance.

18 They have to calculate, obviously, you  
19 know, parameters to make the film appear -- show the image  
20 properly.

21 **UNIDENTIFIED SPEAKER (off mic):** It's a  
22 (inaudible) or you move it along the pipe?

23 **MR. PETROVIC:** Well, if you're doing welds,  
24 your weld would be here. You would do a number of shots  
25 on that particular weld.

1                   They also use it for measuring wall  
2 thickness and other internal defects, basically, or stuff  
3 you want to see internal to the pipe.

4                   **THE CHAIRMAN:** So where's the pig tail;  
5 what's the pig tail?

6                   **MR. PETROVIC:** Okay, inside here -- this is  
7 a demo camera. We didn't want to bring a real one.

8                   And inside here, you would have -- if you  
9 see the white foam in there, generally that's made out of  
10 depleted uranium. And it's like a bladder, if you will,  
11 and this tube inside here is called an "S-tube" and source  
12 travels within that S-tube.

13                   So right now, you could see the capsule in  
14 here, and it's in the centre of the camera and in the  
15 fully shielded position.

16                   The other important thing is the sealed  
17 source has to be in a locked position as well in the  
18 camera to be able to remove your crank thereafter.

19                   **THE CHAIRMAN:** So run by us the scenario  
20 that it went through and what went wrong. Just simulate  
21 what ---

22                   **MR. PETROVIC:** Well, basically, what  
23 happened is the operator cranked out the source and they  
24 had a very short tube here with the collimator; okay, so  
25 it didn't take much to get it out.

1                   He immediately said that there was a  
2 problem -- he felt there was a problem when he was  
3 cranking out. So he immediately tried to retract the  
4 source, but the dose rate did not go down. So he knew he  
5 had a problem.

6                   He tried a few more times. At that point,  
7 he called the person who was responsible for the retrieval  
8 -- who was trained for the retrieval.

9                   **THE CHAIRMAN:** So what -- I still don't  
10 understand how does -- the source is in the camera; right?

11                  **MR. PETROVIC:** Yes.

12                  **THE CHAIRMAN:** How does he get his finger  
13 on it?

14                  **MR. PETROVIC:** Okay, well that's the big  
15 issue.

16                   So just to show you the general -- how it  
17 would work; there's other -- yes, on this end here, you  
18 have two things to do. You put this sleeve in the  
19 operating position, pardon me; and then there's also this  
20 lever here that is colour-coded. Green means it's in the  
21 safe position.

22                   So in -- so the safety mechanism is such  
23 that you have to click this little sleeve in here and now  
24 the camera is ready for use.

25                   On this side here, there's another little

1 window, which I just opened, which locks this connector on  
2 this end, and they had a bit of trouble with that, and  
3 what happens once you crank out the source and when you  
4 crank it back in, this little sleeve here will lock. So  
5 it's now safe and often they will transport the camera  
6 fully hooked up as is.

7 So if it cranks out, you will notice this  
8 sealed source here moving through the camera. Okay, now  
9 it's reached the end and usually as you're travelling  
10 through a tube like this, the dose rate is very high. It  
11 reaches a collimator here and then the dose rate drops  
12 significantly.

13 **UNIDENTIFIED SPEAKER:** (Off microphone)

14 **MR. PETROVIC:** No, no.

15 **UNIDENTIFIED SPEAKER:** Sorry, where is the  
16 dose rate displayed?

17 **MR. PETROVIC:** They carry a survey meter  
18 and they also have to have a personal alarming dosimeter,  
19 electronic dosimeter which gives you real time dose.

20 So at this point, he tries to crank back;  
21 it won't come back in. And because the source is not able  
22 to reach the fully locked position, because he can't reach  
23 it there, there's no way of disconnecting this end of the  
24 camera. It's a safety feature; because you don't want to  
25 be pulling this off when the thing is out.

1                   So they realize -- the retrieval guy shows  
2 up, they realize they have a source disconnect, okay. And  
3 so they decide that they are going to turn the camera this  
4 way. They use an overhead crane to get it to a less  
5 occupied area in the plant. And then they were tapping on  
6 -- well, they were tapping the camera using that overhead  
7 crane, trying to have the sealed source fall back in via  
8 gravity. It didn't work out too well.

9                   After a few attempts, they manage to break  
10 the collimator assembly here off the camera, and the  
11 source was ejected about six feet away from the camera.  
12 So now you had a sealed source which was freed out of  
13 control or not under control.

14                  So what they did is, after discussion it,  
15 which they did prior to actually, you know, continuing  
16 every process, they ended up putting the camera  
17 vertically. They had this window open here, and they used  
18 remote handling tongs, which they are required to have.  
19 They had a lead tunnel as well, which they placed on the  
20 source, once they found it in the plant -- well, I mean in  
21 the location. Via their survey meters, they located it.  
22 They grabbed it with the tongs and then a few different  
23 people attempted putting it back into the camera.

24                  The operator involved in this incident --  
25 what happened was the sealed source was already partially

1 in the camera, but the capsule was actually still sticking  
2 out or a little bit out. And he inadvertently used his  
3 finger because whatever he was using was too flexible, so  
4 he couldn't really contact the capsule. It's not very  
5 big.

6 Once he did that, then they used other  
7 objects, rods and stuff and they got it back in. They  
8 closed this little window here, and they transported it  
9 back to the office and finished getting it into the locked  
10 position.

11 **THE CHAIRMAN:** Sounds to me like a really  
12 clumsy way of dealing with such an accident. What should  
13 they have done? How -- if they pigtail -- is that what  
14 it's called?

15 **MR. PETROVIC:** Pigtail ---

16 **THE CHAIRMAN:** If the pigtail is stuck, how  
17 do you get to it? You have to take it to a shop  
18 somewhere?

19 **MR. PETROVIC:** Definitely. I mean, the  
20 thing is you cannot transport this when it's not in its  
21 fully shielded position because you'll be irradiating all  
22 the way there.

23 And so this retrieval, they did follow  
24 protocol as far as their emergency procedures go, which  
25 were, actually, pretty typical procedures. It's all a

1 question of adrenaline and, you know, emergency situation.  
2 Everyone is tense. In the end, they did successfully  
3 retrieve the source. The big thing was that somebody  
4 actually touched the source in the process.

5 **THE CHAIRMAN:** Does such a malfunction  
6 happen frequently?

7 **MR. PETROVIC:** Not very frequently, no.

8 But it was a failure of the ball connector  
9 at the end. In here, we have the teleflex cable and right  
10 on the end of it, there's a little ball with a shank and  
11 then it goes to a connector and that is what -- that is  
12 what failed.

13 **THE CHAIRMAN:** How often do you have to  
14 service -- do you have to service those cameras? How long  
15 can they last?

16 **MR. PETROVIC:** Yes. They have to follow  
17 manufacturer's recommendations. There are -- they do  
18 daily inspections prior to leaving with the camera. They  
19 have certain tests they have to carry out. They also have  
20 trimestrial inspections which, you know, there's certain  
21 things that they have to check. And then the camera also  
22 has to be tested once a year, a full -- break down the  
23 lock assembly, break down this end and do a test inside  
24 the S tube.

25 **MEMBER HARVEY:** When was it possible to

1 test the part that failed?

2 **MR. PETROVIC:** I'm sorry?

3 **MEMBER HARVEY:** That ball you said that  
4 failed?

5 **MR. PETROVIC:** Yes.

6 **MEMBER HARVEY:** Was it possible on the  
7 inspection to test that?

8 **MR. PETROVIC:** Well, the daily inspection  
9 consists of using this, which is a no-go gauge, and they  
10 test the ball diameter, okay? If it fits through here,  
11 that means it's worn and the thing has to go to a shop, an  
12 authorized shop. They test -- over here, there's a slot  
13 in the female part connector they have to test with  
14 another part here. They test the gap there; then they put  
15 them together; they make the connection, and they test the  
16 distance between this connection and that connection, and  
17 it has to fall within certain parameters.

18 So this is done every day prior to first  
19 exposure.

20 **MEMBER HARVEY:** Or that.

21 **MR. PETROVIC:** Yeah, which they did.

22 They have a daily inspection sheet which  
23 they provided and this test was carried out prior.

24 **THE CHAIRMAN:** I would like to bring the  
25 people online into it, but do you have a question to our

1 inspectors? Go ahead, Dr. Barriault.

2 **MEMBER BARRIAULT:** Specifically, is there a  
3 possibility of having a shielded box to put this whole  
4 thing in, before transporting it rather than messing with  
5 it and trying to get ---

6 **MR. PETROVIC:** They could have had a source  
7 changer, but this is usually the manufacturer who owns  
8 these packages. They are certified for transporting  
9 sealed sources. Ultimately, this would have been the  
10 thing to have at the time because they could have just  
11 dropped it in. It's much easier to insert a sealed source  
12 in there. But the cost of these things is more than the  
13 whole radiography system you see here, and I don't know  
14 one licensee who owns one of these. These are certified  
15 for transport. A lot of people have pods, emergency pods,  
16 but they are not certified for transport, so that was the  
17 issue.

18 **MEMBER BARRIAULT:** Thank you.

19 **MEMBER TOLGYESI:** You said that it happens  
20 seldom; it's not normal or not usually that you have that  
21 problem. So what are the working procedures or protocol  
22 in this case? Because you know what you were saying that  
23 -- they are putting it in the vertical position and try  
24 with a overhead crane, I think that's what you were  
25 saying?

1                   **MR. PETROVIC:** Well, they were holding the  
2 camera in an overhead crane at one point ---

3                   **MEMBER TOLGYESI:** Yes, and they were  
4 bumping it and it broke and it flew -- fly about, I don't  
5 know, six or seven feet? I don't think so. It's a  
6 protocol which is saying that, you should do that ---

7                   **MR. PETROVIC:** No, but this was the result  
8 of the manner in which they attempted to do the job.

9                   **THE CHAIRMAN:** That's why I really don't  
10 want you to answer the question. I'd like to bring those  
11 people in. Okay, the actual operators.

12                   So on the performance of this camera, any  
13 questions, any other thing?

14                   If not, thank you very much.

15                   Stick around, we may ask you some more  
16 technical questions.

17                   Mr. Régimbald?

18                   **M. RÉGIMBALD:** Oui, je voudrais juste  
19 ajouter, monsieur le Président, que pendant toutes ces  
20 opérations, le titulaire est requis d'émettre -- d'ériger  
21 des barrières à une certaine distance pour s'assurer que  
22 la dose de rayonnement n'excède pas 0,1 millisievert.  
23 Donc, il y a des barrières avec des enseignes et des  
24 affiches pour prévenir quiconque de ne pas traverser les  
25 barrières et l'opérateur avec les deux assistants sont

1 obligés de surveiller la zone sécurisée.

2 **LE PRÉSIDENT:** Merci beaucoup.

3 So before opening up to Members for  
4 questions, I would like to turn to Mr. Le lagadec, I don't  
5 know if I've got the name right, from SGS Canada.

6 Do you want to make any comment at this  
7 stage?

8 **MR. Le LAGADEC:** No. I'm pretty happy with  
9 what Mr. Fundarek said. And you know any questions you  
10 can forward them and if I can't answer them, I will pass  
11 them on to the actual operators and the manager of the  
12 group.

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

14 Alors, on va commencer avec Monsieur  
15 Harvey.

16 **MEMBRE HARVEY:** Merci, monsieur le  
17 président.

18 J'aimerais -- c'est Monsieur Robillard qui  
19 est à Québec -- lui demander si la façon dont ça a été  
20 rapporté ici, est-ce que ça reflète exactement la façon --  
21 ce qui s'est produit à Québec et la façon dont l'incident  
22 a été traité?

23 **M. ROBILLARD:** Disons que moi, je pourrais  
24 répondre que c'est un excellent résumé.

25 **(RIRES/LAUGHTER)**

1                   **MEMBRE HARVEY:** C'est une bonne réponse.

2                   On va vous donner un A.

3                   Mais je voudrais aussi voir, parce qu'on a  
4                   mentionné qu'il y avait des barrières qui devaient être  
5                   placées et tout ça. Est-ce que le protocole que vous avez  
6                   dans des circonstances comme ça, c'est un protocole, est-  
7                   ce un protocole écrit, un protocole de la compagnie ou un  
8                   protocole de la Commission?

9                   **M. ROBILLARD:** Bien, c'est un protocole de  
10                  la Commission et j'ai suivi une formation sur la  
11                  récupération de source de radiographie industrielle.  
12                  Bref, je vous dirais que tout ce qui a été effectué, ben,  
13                  c'est dans ce livre.

14                  **MEMBRE HARVEY:** C'était conforme au  
15                  protocole?

16                  **M. ROBILLARD:** Oui.

17                  **MEMBRE HARVEY:** Et je voudrais -- une  
18                  question à la Commission, au personnel, c'est vous parliez  
19                  qu'il y avait un opérateur qui était certifié, deux  
20                  assistants qui ne l'étaient pas. Est-ce que c'est normal?

21                  **M. RÉGIMBALD:** Oui, c'est André Régimbald  
22                  ici.

23                  Habituellement, bien je ne dirais pas  
24                  habituellement, mais c'est une exigence réglementaire que  
25                  la personne qui manipule l'appareil doit être un opérateur

1           accrédité par la Commission ou cette personne peut être un  
2           stagiaire mais il doit être surveillé par un opérateur qui  
3           est accrédité. Donc ça, c'est une exigence réglementaire.

4                       Alors l'opérateur qui était un opérateur  
5           accrédité, à ce moment-là était la personne qui opérait  
6           l'appareil mais il était aidé par deux assistants, ce qui  
7           est habituellement le cas pour aider avec les films et la  
8           gestion des barrières, et cetera.

9                       **MEMBRE HARVEY:** Et c'est l'opérateur qui a  
10          utilisé son doigt pour pousser le ---

11                      **M. RÉGIMBALD:** Oui.

12                      **MEMBRE HARVEY:** --- la pièce?

13                      En terminant, Monsieur Robillard, tout cet  
14          événement-là, ça a duré combien de temps?

15                      **M. ROBILLARD:** Je vous dirais environ deux  
16          et demie, trois heures.

17                      **MEMBRE HARVEY:** Merci.

18                      **THE CHAIRMAN:** For all of you online, we  
19          are hearing some feedback of some translation. Maybe you  
20          can use -- to mute your phone while you're doing that.

21                      **UNIDENTIFIED SPEAKER:** Okay, we apologize  
22          for that.

23                      **THE CHAIRMAN:** No problem. Okay.

24                      Go ahead, Monsieur Harvey.

25                      **MEMBRE HARVEY:** Une dernière question,

1 Monsieur Robillard. Est-ce que c'est la première fois que  
2 vous rencontrez un problème de cette nature avec ce type  
3 d'équipement?

4 **MR. ROBILLARD:** Oui.

5 **MEMBRE HARVEY:** Merci.

6 **LE PRÉSIDENT:** Docteur Barriault?

7 **MEMBRE BARRIAULT:** Merci, monsieur le  
8 président.

9 Pour Monsieur Robillard, êtes-vous  
10 satisfait du dessin de cet appareil-là pour s'en servir du  
11 jour au jour ou est-ce qu'il y a de meilleurs appareils  
12 que celui-ci?

13 **M. ROBILLARD:** Je vous dirais que moi, je  
14 ne m'en sers plus beaucoup. Ce que je peux dire c'est que  
15 les commentaires des opérateurs que j'ai c'est que c'était  
16 un petit peu plus simple avec l'ancien modèle, le 660.

17 **MEMBRE BARRIAULT:** O.k. Merci.

18 Pour CNSC, qui est responsable pour le  
19 licenciement de ces appareils, la certification de ces  
20 appareils?

21 **M. RÉGIMBALD:** André -- Premièrement,  
22 l'appareil -- tous les appareils utilisés en gammagraphie  
23 sont homologués, doivent être homologués par la  
24 Commission, par le groupe de monsieur Sylvain Faille, qui  
25 sont des spécialistes pour la conception des appareils et

1 leur utilisation.

2 Je vais laisser le soin à Monsieur Faille  
3 d'expliquer les critères d'évaluation pour l'homologation  
4 des appareils. Mais une fois que -- l'appareil ne peut  
5 pas être utilisé sans qu'il soit homologué et aussi il  
6 faut qu'il fasse partie d'un permis.

7 Donc, il doit faire partie du permis qui  
8 autorise le titulaire à s'en servir.

9 Donc, Monsieur Faille.

10 **M. FAILLE:** Merci. Sylvain Faille, pour le

11 ---

12 Du côté de l'homologation des appareils;  
13 donc les appareils de radiographie industrielle ou  
14 gammagraphie sont généralement faits selon des -- leur  
15 conception est faite selon des standards qui existent au  
16 niveau international et la norme ISO 3999 ainsi qu'une  
17 norme ANSI aux États-Unis qui s'appliquent à la conception  
18 de ces appareils-là. Et la plupart des fabricants suivent  
19 ces standards lors de la fabrication du concept de ces  
20 appareils-là. Ils sont testés aussi selon ces normes-là.

21 Et nous, on évalue les résultats qui sont  
22 fournis par les manufacturiers pour s'assurer que  
23 l'appareil est conforme aux normes qu'ils ont utilisées  
24 pour faire la conception; et s'assurer aussi qu'il y a  
25 certains tests qui sont faits sur l'endurance de certaines

1 composantes.

2 On fait aussi la vérification au niveau de  
3 la documentation qui est fournie au titulaire de permis  
4 pour avoir l'information sur l'entretien des appareils  
5 pour s'assurer qu'ils peuvent fonctionner sur une longue  
6 période de temps.

7 **MEMBRE BARRIAULT:** Au point de vue de  
8 communication avec tout le monde sur ces appareils-là, le  
9 suivi de cette discussion-ci, est-ce qu'à un moment donné,  
10 il va y avoir des rapports envoyés à tout le monde sur ces  
11 appareils-là leur disant des problèmes qui ont été  
12 observés avec cet appareil?

13 **M. RÉGIMBALD:** Oui, si, durant notre  
14 enquête, nous découvrons ou nous nous apercevons qu'il y a  
15 un problème lié à la conception, au matériel utilisé pour  
16 l'appareil, nous allons -- il y a plusieurs options; soit  
17 que nous retirons l'homologation de l'appareil jusqu'à ce  
18 que le manufacturier corrige le problème. Nous allons  
19 avertir tous les titulaires de permis qui utilisent des  
20 appareils de gammagraphie industrielle.

21 Et aussi on va publier dans notre bulletin  
22 de la DNSR de l'information à cet effet, donc, pour  
23 s'assurer que les titulaires suivent soit des  
24 recommandations de correction du manufacturier ou  
25 simplement les aviser que l'appareil sera homologué; mais

1 je dis ça sous toute réserve, dépendant des résultats de  
2 notre étude. Et le manufacturier devra soumettre une  
3 nouvelle demande pour ré-homologuer l'appareil avec les  
4 correctifs qui vont être apportés.

5 **LE PRÉSIDENT:** Qui sont les manufacturiers?  
6 Est-ce que c'est -- canadien?

7 **M. RÉGIMBALD:** Dans ce cas-ci, la compagnie  
8 s'appelle QSA Global. Ils sont établis aux États-Unis.

9 **LE PRÉSIDENT:** Monsieur Barriault?

10 **MEMBRE BARRIAULT:** Est-ce qu'une partie de  
11 cet appareil inclut une boîte sécuritaire pour transporter  
12 la matière nucléaire?

13 **M. FAILLE:** Non. Pour le transport,  
14 l'appareil lui-même est aussi le colis. Il n'y a pas de  
15 -- c'est l'appareil lui-même qui est homologué comme étant  
16 un colis de transport. Il existe, comme monsieur Petrovic  
17 a mentionné plus tôt, il y a des changeurs de sources,  
18 qu'on appelle, qui sont faits pour transporter les sources  
19 chez les titulaires.

20 Donc il y a différents modèles qui peuvent  
21 être utilisés mais aussi sur le site, comme il a été  
22 mentionné, il y a des -- la plupart des titulaires de  
23 permis ont aussi des contenants blindés où ils peuvent  
24 mettre les sources temporairement. Donc, ils peuvent les  
25 mettre de façon temporaire, les sécuriser avant d'avoir --

1 d'obtenir soit un changeur de source ou de réussir à faire  
2 des modifications à leur appareil pour pouvoir y mettre la  
3 source à l'intérieur.

4 **MEMBRE BARRIAULT:** O.k. La boîte de  
5 transportation ne fait pas partie de cet appareil pour  
6 transporter des sources qui peuvent se briser, se casser,  
7 pour être capable de les remettre dans l'appareil.

8 Il me semble qu'il devrait y avoir un  
9 système plus sécuritaire pour essayer de transporter ces  
10 sources-là. C'est vrai que c'est pas souvent que ça  
11 arrive, comme vous le disiez.

12 **M. RÉGIMBALD:** L'appareil est conçu avec,  
13 comme Monsieur Petrovic l'a expliqué, avec des mécanismes  
14 de sécurité et de sûreté.

15 Donc, on ne peut pas sortir la source sans  
16 brancher le câble, par exemple, et sans brancher le tube  
17 de guidage, par exemple.

18 **MEMBRE BARRIAULT:** Non, je comprends ça.

19 **M. RÉGIMBALD:** Oui.

20 **MEMBRE BARRIAULT:** Sauf que, une fois la  
21 matière sortie et puis -- tu n'es pas capable de la  
22 rentrer de nouveau, qu'est-ce qu'on fait avec? C'est pour  
23 éviter une récurrence du problème qui s'est démontré ici  
24 puis je me demande s'il n'y aurait pas un moyen de ---

25 **M. RÉGIMBALD:** Oui.

1                   **MEMBRE RÉGIMBALD:** --- de faire partie de  
2 l'appareil qui aurait peut-être -- ce serait pas une  
3 grosse boîte parce que l'appareil n'est pas gros, pour  
4 mettre la matière nucléaire de la source pour transporter  
5 dans l'occasion d'une autre incidence.

6                   Si y en a une, il doit y en avoir d'autres  
7 j'ai l'impression. Peut-être qu'ils ne sont pas  
8 rapportées, je ne sais pas.

9                   **M. RÉGIMBALD:** Oui. Nous avons -- nous  
10 allons étudier en détail les circonstances de l'incident  
11 et nous allons revoir les procédures d'urgence que le  
12 titulaire a appliquées et aussi pour voir s'il y a des  
13 mesures correctives que le titulaire pourrait apporter  
14 dans les mesures d'urgence, selon les résultats de notre  
15 étude.

16                   **MEMBRE BARRIAULT:** O.k.

17                   **M. RÉGIMBALD:** Et nous allons mettre en  
18 oeuvre ou faire des exigences supplémentaires si c'est le  
19 cas.

20                   **MEMBRE BARRIAULT:** Merci. Merci, Monsieur  
21 le Président.

22                   **LE PRÉSIDENT:** O.k., merci. Dr. McDill?  
23 Mr. Tolgyesi?

24                   **MEMBRE TOLGYESI:** Merci, Monsieur le  
25 président.

1                   Monsieur Robillard, est-ce que l'opérateur  
2 certifié qui faisait les tentatives de remettre la source,  
3 est-ce qu'il était seul lorsqu'il l'a fait ou il avait ses  
4 assistants qui l'aidaient, qui tenaient l'appareil ou je  
5 ne sais pas, qui étaient autour?

6                   **M. ROBILLARD:** Donc, en situation d'urgence  
7 comme ça, on s'approche de la source rapidement et on  
8 retourne rapidement et on y va seulement une personne à la  
9 fois pour séparer les doses reçues, si je peux dire.

10                   Donc, à ce moment-là, l'opérateur était  
11 seul autour de l'appareil. Les autres étaient loin en  
12 arrière.

13                   **MEMBRE TOLGYESI:** Et quand vous avez  
14 recueilli les pièces, la source qui est tombée, comment  
15 vous avez fait? Je veux dire, tu peux aller là, la  
16 ramasser avec la main, la ramener dans une position  
17 sécuritaire ou l'entreposer dans une boîte qui est  
18 protégée ou qu'est-ce que vous faites?

19                   **M. ROBILLARD:** On s'approche et on a un  
20 outil. C'est une pince qui mesure un mètre et demi. Ça  
21 fait qu'on prend la source avec la pince et on l'insère  
22 dans la caméra.

23                   **MEMBRE TOLGYESI:** Est-ce que vous avez  
24 communiqué avec le manufacturier et quelle était sa  
25 réaction ou sa réponse, son aide, ses conseils?

1                   **M. ROBILLARD:**  Moi, je n'ai pas  
2                   personnellement communiqué avec le manufacturier mais je -  
3                   - c'est M. Richard Sansfaçon et M. Douglas Hanna qui ont  
4                   communiqué avec le manufacturier.

5                   **MEMBRE TOLGYESI:**  Et qu'est-ce que c'était  
6                   la réponse qu'ils ont reçue?

7                   **MR. Le LAGADEC:**  Douglas, can you answer  
8                   that?

9                   **MEMBER TOLGYESI:**  Yes, the question is to  
10                  you.

11                  **THE CHAIRMAN:**  No, he's asking -- we have a  
12                  Mr. Hanna on line.  Mr. Hanna, can you hear us?

13                  **MR. HANNA:**  Yes, I can.

14                  What was the question?  Sorry, we're having  
15                  trouble; we're only getting the French version and not the  
16                  English.  So I didn't quite catch the question.

17                  **MEMBER TOLGYESI:**  Okay.  The question was  
18                  that in a situation like this, when it happened, if it's  
19                  usual to communicate with the manufacturer to have a  
20                  technical support or otherwise or what to do.  And did you  
21                  do that and what was the reaction of the manufacturer?

22                  **MR. HANNA:**  In this situation, the  
23                  manufacturer is the same people that train in the recovery  
24                  procedure.  They have generics -- set up generic  
25                  situations of what you do.  But each recovery situation is

1 unique. So you have to improvise as you go along.

2 But yes, all these procedures that we have  
3 in place are made and written up by the manufacturer on  
4 how to retrieve that source and put it safely back into  
5 the camera.

6 **MEMBER McDILL:** But you didn't actually  
7 call the manufacturer during the incident?

8 It's Moyra McDill.

9 **MR. HANNA:** During the incident, no, the  
10 manufacturer was not called. There was, at that point, no  
11 question on what to do. It was very straightforward.

12 There is some cases where it is -- becomes  
13 too complicated to put it back into the camera, and we  
14 need to call them for advice on what is the best method to  
15 do that. But in this case, it wasn't necessary.

16 **MEMBER TOLGYESI:** So what you're trying to  
17 say -- that this situation is not unique. There are  
18 several times it happens.

19 And how far you try to find a solution with  
20 the manufacturer to this, because I think if it happens  
21 quite often, it's ---

22 **THE CHAIRMAN:** That's not my -- what I  
23 heard.

24 How often does such events happen across  
25 the whole country?

1                   **MR. HANNA:** Are you still asking me? If  
2 you are, the question is 20 years we have not had to do  
3 one retrieval in SGS or -- and previously X-PER-X in our  
4 three locations that we do industrial radiography.

5                   **THE CHAIRMAN:** So it's a very rare event,  
6 right? It's a very rare accident that happened?

7                   **MR. HANNA:** Yes, it is. It's very unique.  
8 Even though we're trained to do it, it's not something we  
9 do every day. Like I say, in 20 -- this is the first one  
10 in 20 years.

11                   **THE CHAIRMAN:** Okay. Staff, is that the  
12 kind of -- so that's what the study. And by the way,  
13 their report was supposed to be filed February the 10<sup>th</sup>.  
14 Was it filed?

15                   **MR. REGIMBALD:** Yes, it was. It's under  
16 review.

17                   **THE CHAIRMAN:** So you now know the root  
18 cause and you know everything about it, right?

19                   **MR. REGIMBALD:** We have the information.  
20 We are in the process of analyzing it to determine exactly  
21 what the root cause was and if there are any measures that  
22 we need to take from a regulatory standpoint with respect  
23 to the licensee and with respect to the certification of  
24 the device.

25                               But I would just like to comment, if I may,

1       sir, on the occurrences of these events. There are  
2       thousands and thousands of operations of this kind each  
3       year performed by hundreds of licensees across Canada and  
4       events of this type occur on rare occasions.

5               But we will -- as part of our review, we  
6       will check our incident database and also use that  
7       information in determining what actions might be required.

8               **THE CHAIRMAN:** Okay. Thank you.

9               Okay, Ms. Velshi?

10              **MEMBER VELSHI:** I have a comment and a  
11       question. And the comment it's part of what Mr.  
12       Robillard's comment that this is an excellent summary. I  
13       think there's some critical information missing. The fact  
14       that the source was loose in the workplace, I think is a  
15       very significant part of the event, and I think it should  
16       have been captured.

17              The question is how confident are you in  
18       the dose estimate? It's based on, you know, what you saw  
19       the source as being; a second, could have easily been  
20       three seconds. I mean, I don't know. Is this a  
21       conservative estimate? Is it a realistic one? Could it  
22       have been three times as high?

23              **MR. ROBILLARD:** Excuse me; I'm not sure I  
24       understand the question.

25              **MEMBER VELSHI:** Is the staff answering the

1 question -- okay.

2 **MS. RICKARD:** Melanie Rickard, for the  
3 record.

4 The dose estimate is considered to be  
5 conservative. We actually -- staff's opinion is actually  
6 that the time estimate is probably quite high. We think  
7 because it was such a reactive type of movement, that it  
8 was probably actually less than a second, which will make  
9 a huge difference in the dose.

10 So the dose to the finger in the order of  
11 four sieverts, we think is, like I said, quite high. And  
12 some other factors that were used in the estimation also  
13 lead to conservatism. So that, coupled with the fact that  
14 we haven't seen any radiation health effects to the  
15 individual's finger, leads us to conclude that four is  
16 high. In fact, it could be as low as one to two sieverts  
17 as opposed to four.

18 And at this type of dose, even if we assume  
19 four was correct, we would expect the health effects to be  
20 -- the extent of the health effects to be skin reddening,  
21 nothing beyond that.

22 **MEMBER VELSHI:** Thank you.

23 **THE CHAIRMAN:** So there were no skin  
24 reddening observed?

25 **MR. Le LAGADEC:** This is Hervé Le lagadec

1 out of Lakefield.

2 We are presently monitoring the gent and  
3 the -- there's been no indication of at all manifestation  
4 of any burn whatsoever.

5 **THE CHAIRMAN:** Thank you.

6 For staff, at what dosage will you start --  
7 what's the practice in which you can actually know that  
8 you've got an observable health effect?

9 **MS. RICKARD:** Melanie Rickard, for the  
10 record.

11 It's difficult to be certain that a health  
12 effect will occur but based on information presented from  
13 the International Commission on Radiation Protection, they  
14 set a threshold for skin reddening at about two sieverts.

15 And as I said, this doesn't mean that each  
16 individual, if they did receive two sieverts, would in  
17 fact observe skin reddening, but this is the information  
18 that we have. So it starts at about two. And, of course,  
19 there will be other effects at much higher doses which, in  
20 this case, is not what we're dealing with.

21 **THE CHAIRMAN:** So that's why you are --  
22 because there was no visible effect or discernible effect,  
23 you probably believe that there may be a high probability  
24 of the dosage being lower. Is that the way you argue?

25 **MS. RICKARD:** Absolutely, in addition to

1 the fact that we took conservative assumptions into  
2 account when we did the actual calculation.

3 **THE CHAIRMAN:** The fact that the source was  
4 actually kind of jumped out of the thing, is that unusual?  
5 I mean, it seems to me then it wasn't locked into the  
6 capsule very well.

7 **MR. REGIMBALD:** This is an element we're  
8 not sure of at this time. Again, we will need to analyse  
9 carefully the information and meet the licensee, possibly  
10 re-enact, you know, the event to fully understand why the  
11 source was ejected like that.

12 **THE CHAIRMAN:** Okay. Thank you.  
13 Monsieur Harvey?

14 **MEMBRE HARVEY:** Dernière question à  
15 Monsieur Robillard.

16 C'est: Est-ce que vous portez des vêtements  
17 spéciaux et des gants quand vous faites ces opérations?

18 **MONSIEUR ROBILLARD:** Aucunement.

19 On est habillés normalement puis on a des  
20 gants de cuir qu'on enlève de temps en temps parce que,  
21 théoriquement, il y a aucun problème à utiliser ces -- ces  
22 appareils d'exposition-là.

23 **MEMBRE HARVEY:** Est-ce que l'opérateur  
24 portait des gants lorsqu'il a touché à l'équipement?

25 **MONSIEUR ROBILLARD:** Oui, il avait une

1       paire de gants de nitrile. Bref, c'est du tissus enduit  
2       de caoutchouc. Alors, environ 1.8mm d'épais.

3                   **MEMBRE HARVEY:** Merci.

4                   Pour le staff, il y a pas de -- est-ce  
5       qu'il y a des gants spéciaux ou des vêtements qui  
6       pourraient améliorer les choses dans les circonstances  
7       semblables?

8                   **MONSIEUR RÉGIMBALD:** Considérant la  
9       puissance de la source, le gant n'aurait pas eu d'effet,  
10      de blindage.

11                  But I will ask Ms. Rickard if she can  
12      supplement any information in this regard.

13                  **MS. RICKARD:** Melanie Rickard, for the  
14      record.

15                  Yes, that's correct. In this case, the  
16      source is fully intact so loose contamination is not an  
17      issue.

18                  And, again, because it's a strong photon  
19      emitter, gloves and clothing and such are not necessary in  
20      this type of application or would they have helped the  
21      reduction in dose.

22                  **THE CHAIRMAN:** Dr. McDill?

23                  **MEMBER MCDILL:** Thank you.

24                  A question to staff and possibly also to  
25      the operator: Do you anticipate there'll be a change in

1 protocol that comes from this event?

2 For example, banging it on the table with  
3 an overhead crane seems to be a bit excessive but ...

4 **MR. RÉGIMBALD:** I would say, Dr. McDill,  
5 that it's premature at this time to determine these  
6 corrective measures or implement new requirements.

7 As I've said, we want to have a full  
8 understanding of exactly what happened, all the steps  
9 taken by the operator and we will have Mr. Sylvain's  
10 Faille's group look at the equipment itself to see if  
11 there are any issues with respect to the certification.

12 **MEMBER MCDILL:** And from the operator, have  
13 you instituted any temporary changes in protocol?

14 **MR. LE LAGADEK:** Douglas, can you answer  
15 that?

16 **MR. HANNA:** Have we made? Not at this  
17 time, we haven't found the root cause and so we're still  
18 waiting for recommendations to come back.

19 **MEMBER MCDILL:** So hypothetically speaking,  
20 if you had another incident like this in the next few  
21 weeks, would you expect the same steps to be followed or  
22 would you hope that, maybe, the operator or the  
23 technicians would touch base with you before they began?

24 **MR. HANNA:** Yes, we're definitely going to  
25 move to a higher level of -- "higher lever", I shouldn't

1 say that -- more people will be informed before the  
2 recovery process starts and, like I say, myself included  
3 from now on till this is regulated what exactly took place  
4 will be involved in any recovery situations that occur.

5 **MEMBER MCDILL:** Thank you.

6 **THE CHAIRMAN:** Okay.

7 Dr. Barriault?

8 **MEMBER BARRIAULT:** Just one brief question,  
9 Mr. Chairman, I'm sorry.

10 Can we find out from the repair shops how  
11 often this type of problem arises with this instrument?

12 **MR. RÉGIMBALD:** Yes, we can certainly find  
13 out.

14 We have -- the repair shops are licensed by  
15 the CNSC to service this type of equipment and we can find  
16 the information and report back at the next time we will  
17 come before you.

18 **MEMBER BARRIAULT:** Thank you, that would  
19 give us a much better idea, really, of the, I guess,  
20 frequency of the problem and if, indeed, people are  
21 reporting when they have this kind of a problem. Thank  
22 you.

23 Thank you, Mr. Chairman.

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

25 I think it's a good time to break for 15

1 minutes. So we'll see you at 10 past.

2 **MR. HANNA:** Okay, thank you.

3 **THE CHAIRMAN:** Thank you for the -- sorry,  
4 I should have said thank you for this -- the SGS people,  
5 thank you for being with us.

6 **MR. HANNA:** All right. It's all right,  
7 with your permission then, to sign off?

8 **THE CHAIRMAN:** Yes.

9 **MR. HANNA:** Or are we finished with our  
10 portion?

11 **THE CHAIRMAN:** Yes, we did.

12 **MR. HANNA:** Okay, thank you very much.

13 **MR. LE LAGADEC:** Okay, merci beaucoup.

14 **THE CHAIRMAN:** Merci beaucoup.

15 **MONSIEUR RÉGIMBALD:** Merci.

16 **THE CHAIRMAN:** Bye bye.

17

18 --- Upon recessing at 11:05 a.m.

19 --- Upon resuming at 11:18 a.m.

20

21 **THE CHAIRMAN:** Okay, we are back and we are  
22 moving on to the next item on the Agenda which is:  
23 Decision Items on Regulatory Documents.

24 And the next item is: RD/GD 93.3 -  
25 Requirements and Guidance for Public Information and

1 Disclosure.

2 (SHORT PAUSE/COURTE PAUSE)

3 THE CHAIRMAN: Okay, I'm told that there is  
4 some answers to a question from the last session.

5 So, for the record, Phil, please --  
6 Mr. Webster, please proceed.

7 MR. WEBSTER: Thank you very much,  
8 Mr. President and good morning, Members of the Commission.

9 Yes, in response to the question from  
10 Commissioner Velshi ---

11 THE CHAIRMAN: Identify yourself for the  
12 record, please.

13 MR. WEBSTER: I beg your pardon, I'm Philip  
14 Webster. I'm the Director of the Darlington Regulatory  
15 Program.

16 In response to the question from  
17 Commissioner Velshy, we did a quick search in our events  
18 database for any reported events that involved a loss of  
19 Class IV or a Class IV bus failure and what I can tell you  
20 is that, from this very quick search, we've come up with  
21 51 reported events.

22 Now, if I can try to put this into  
23 perspective, our events database began with what's called  
24 the "NPD", Nuclear Power Demonstrator. So there are many  
25 reactor years of operation captured in there.

1           It's hard to be precise but we think this  
2           is perhaps between 400 and 500 reactor years of experience  
3           which have led to these 51 reported events.

4           Now, without going further into the context  
5           of the particular failures, it's really hard to say but it  
6           would appear that no more than once every ten reactor  
7           years have we had this kind of event.

8           From our quick review, we can say that the  
9           vast majority of them have caused a loss of redundancy.  
10          For example, there would have been a transfer test from  
11          Class IV to Class III and the Class III would not have  
12          picked up. That would have caused a problem on that bus  
13          but it would not have caused the loss of function, it  
14          would not have caused the loss of power within the unit.

15          I would also say that quite a few of the  
16          events came from the August, 2003 blackout. So, again,  
17          you should subtract from that total.

18          It's hard to say how many of them were what  
19          you may call a "serious problem" with the loss of Class IV  
20          or a Class IV bus failure but it does, in my view at  
21          least, indicate this is an occasional happening which  
22          generally does not cause serious consequences. Thank you.

23                   **THE CHAIRMAN:** The database goes back to  
24                   what year?

25                   **MR. WEBSTER:** NPD was before my time in

1 Canada. It's perhaps the 1950s.

2 **THE CHAIRMAN:** The 1950s.

3 Again, I know it doesn't sound like a lot  
4 but this is power and, now, we are a bit -- post-  
5 Fukushima, we are very sensitive to any power failure, as  
6 you know, and we should take this under consideration  
7 because -- of that sensitivity to any possibility of a  
8 redundancy failure.

9 We may want to -- I know that 50 over 400  
10 years or whatever the numbers you've quoted here doesn't  
11 sound like much but when we start talking about low-  
12 probability, high-impact events that number may be still  
13 too high.

14 It's just my non-scientific observation  
15 that we will deal with when we actually deal with the  
16 post-Fukushima plans, just for the record.

17 Anybody else want to make a comment on  
18 this?

19 Okay, thank you.

20 **MR. RZENTKOWSKI:** Greg Rzentkowski, for the  
21 record, Director General of Power Reactors Regulation.

22 For clarification, I would like to add that  
23 the event we are discussing was a very localised loss of  
24 class for power. This wasn't a loss of grid, which we  
25 often call loss of Class IV power as well. So I just

1 wanted to make this distinction.

2 **THE CHAIRMAN:** Okay.

3 Dr. Barriault?

4 **MEMBER BARRIAULT:** Just one brief  
5 statement, really.

6 It was my understanding that the Early  
7 Notification Reports would be available in both official  
8 languages at this time, in early February. Maybe somebody  
9 would care to comment where we're at with this?

10 **MR. ELDER:** We -- Peter Elder.

11 Tous les formulaires et toutes les  
12 précieuses (phon.) sont distribués dans les deux langues  
13 maintenant.

14 **MEMBRE BARRIAULT:** Merci. J'apprécie ça.  
15 Thank you Mr. Chair.

16 **THE CHAIRMAN:** Thank you.

17 Okay. Let's move on to the agenda, and we  
18 are dealing with CMD 12-M5. And this is requirement and  
19 guidance for public information and disclosure.

20 And I'll turn the floor to Mr. Elder.

21

22 **5. Decision Items**

23

24 **5.1 RD/GD-993 - Requirements**

25 **And Guidance for Public**

1           **Information and Disclosure**

2  
3           **12-M5**

4           **Oral presentation by**

5           **CNSC staff**

6  
7                   **MR. ELDER:** Good morning Mr. President,  
8           Members of the Commission. For the record, my name is  
9           Peter Elder. I'm the Director General, Directorate of  
10          Nuclear Cycle and Facilities Regulation.

11                   With me at the front table today is Ms.  
12          Sunni Locatelli, our Director General of Strategic  
13          Communications Directorate, and Mr. Mark Dallaire, our  
14          Director General of Regulatory Policy Directorate. Behind  
15          me, we have representatives from our other regulatory  
16          operations branches and as well as other staff involved  
17          with this document.

18                   Today I will be presenting you the  
19          regulatory and guidance document RD/GD-99.3, which  
20          provides the requirements and expectations for licensees'  
21          and applicants' public information programs and including  
22          public disclosure.

23                   The objective of this presentation is to  
24          seek your approval to publish this document and also to  
25          discuss the path forward on implementation.

1           So I'll briefly describe the project,  
2           providing some background as well as some general overview  
3           of how this document fits within our overall reporting  
4           structure, then discuss the general approach and  
5           principles embedded in the document, 99.3, and also  
6           provide overview of the results of the most recent public  
7           consultation on the document.

8           I will conclude with overview of how staff  
9           proposes to integrate this document into our licensing and  
10          compliance oversight.

11          So turning to the overview, currently, most  
12          major facilities in Canada have well developed public  
13          information programs, many of which include regular  
14          reporting to the public. Staff similarly report to the  
15          Commission on the program performance and at licence  
16          renewals and at annual performance reports.

17          Staff have developed this new regulatory  
18          document to formalize our expectations for public  
19          information and public disclosure to ensure consistency in  
20          approaches used by licensees in developing these programs.

21          In general, this document specifies the  
22          public information programs should be designed to account  
23          for the public's perception of risk and the level of  
24          public interest in the licence activities and be based on  
25          active engagement with the local communities.

1           This new regulatory document addresses the  
2           need for licensees to ensure the public is informed of the  
3           licence activities and incorporates -- and the document  
4           also incorporates previous CNSC guidance on public  
5           information programs.

6           Just a little more on the background of  
7           this one; as the Commission is aware, the CNSC has always  
8           strived to ensure that there's timely and accurate  
9           dissemination of information to the public on nuclear  
10          facilities.

11          Over the past few years, there has been  
12          significant public attention and concern about some events  
13          that would be generally considered routine or as having  
14          negligible impacts on safety.

15          Some of the concern can be attributed to  
16          lack of timely and factual information being available to  
17          the public. It was clear to CNSC staff that public  
18          disclosure events needed to be improved.

19          Having identified the need to improve  
20          timely release of information, CNSC staff identify  
21          facilities that have had a relatively high level of public  
22          interest based on our experience with them.

23          In 2008, the licensees for these  
24          facilities, which includes all major nuclear facilities,  
25          were entrusted to implement voluntary public disclosure

1 programs for nuclear operations and events.

2 So this means that since 2008, nuclear  
3 power plant operators, other major research facilities,  
4 uranium mines and mills as well as most uranium and fuel  
5 processing facilities have had in place public disclosure  
6 protocols.

7 To date, these programs have proved to be  
8 successful in mitigating public concerns.

9 For example, AECL provided weekly updates  
10 to the public on the repair of the NRU vessel consistent  
11 with their public disclosure protocol. The updates were  
12 not regulatory in nature, but rather, designed to provide  
13 the public information on the status of the repair.

14 While the voluntary public disclosure  
15 protocols have been generally effective, it has become  
16 apparent that some rules do need to be formalized.  
17 Therefore, CNSC staff undertook this project to update and  
18 formalize our expectations for both public information  
19 programs and public disclosure, which has resulted in the  
20 document that you have before you today.

21 In developing this document, CNSC staff  
22 have attempted to build on the successful public  
23 information programs already in place.

24 There's a little background now on this  
25 document and how it fits with the other ones in the 99

1 series.

2 As most of the Commission Members will  
3 recall, we have presented a version of this document to  
4 the Commission in August of 2011 together with a suite of  
5 documents on regulatory reporting.

6 So there -- at that time, there were six  
7 documents, a regulatory document and regulatory guidance  
8 document pair on event reporting for nuclear power plants  
9 that were 99.1 and -- 99.1; a similar pair on the  
10 compliance reporting for nuclear power plants, again 99.2;  
11 and the public information and disclosure, which were  
12 separate regulatory documents and guides.

13 At that Commission meeting, industry  
14 stakeholders sought additional time to review and comment  
15 on the proposed documents. And I'll -- furthermore, the  
16 Commission directed staff to consider consolidating the  
17 suite of documents.

18 So the six documents that were presented at  
19 that time have been consolidated into three, RD and --  
20 regulatory document and guidance document on event and  
21 compliance reporting for nuclear power plants, which is  
22 under the 99.1 number, and the combined RD/GD on public  
23 information programs, which is 99.3.

24 After the consolidation, stakeholders were  
25 provided with additional opportunity to comment on the

1 documents in the fall of 2011.

2 Today, CNSC staff believe that 99.3 is  
3 sufficiently advanced to be ready for publication.

4 However, based on the comments received, some additional  
5 work remains on the proposed RD-99.1 and GD-99.1, in  
6 particular relating to safety performance indicators.

7 So these will be presented to the  
8 Commission at a future meeting that will focus on the  
9 reporting for nuclear power plants.

10 So just to recap on the documents and how  
11 it replaces what it is, I won't go too much into the 99.1,  
12 which will be discussed at a future meeting, but would  
13 like to note that there is already guidance available  
14 under G-217 on public information programs, and this will  
15 be superseded by the RD/GD on the 99.3.

16 And just in case anybody's interested, we  
17 have reserved the 99.2 number for a document under  
18 development that is reporting requirements for other Class  
19 1 facilities and uranium mines and mills. And this is  
20 currently under development.

21 I'd like to discuss a bit about the legal  
22 basis for this document.

23 First, there are two elements to this. The  
24 first is a general provision in the *Nuclear Safety Control*  
25 *Act* for the Commission to disseminate objective

1 scientific, technical and regulatory information to the  
2 public concerning the activities of the Commission but,  
3 and this is my emphasis, on the effects on the environment  
4 and health and safety of the regulated entities.

5 So there is a clear part of the CNSC's  
6 mandate, so we have -- this document has been developed to  
7 strengthen this objective, as it will ensure facilities  
8 develop and maintain public information programs that are  
9 appropriate to their needs.

10 In addition, Class I and uranium mines and  
11 mills are required through regulation to provide public  
12 information programs with any application. While the  
13 regulations say this is on the anticipated impacts on the  
14 public of the events, the common practice has been  
15 expectation from CNSC staff that licensees continue to  
16 inform the public after the licence is issued and, in a  
17 number of cases, such a requirement for a public  
18 information program has been included as a licence  
19 condition.

20 In terms of the Class II nuclear  
21 facilities, the regulations are slightly different in that  
22 the public information program requirement is only for a  
23 licence to construct.

24 Again, similar to the other ones, our staff  
25 position is that licensees -- that the expectation to

1 maintain this program is through operations as well.

2 So our general position is that licence  
3 conditions should be included for all major facilities  
4 and, in this regard, 99.3 provides clear regulatory  
5 expectations in this regard.

6 There may be a need in the future to  
7 consider updating the regulations to make them more clear  
8 in this regard, but we think 99.3 is really just  
9 clarifying what is a current expectation of licensees'  
10 performance.

11 One thing that it's important to see is how  
12 the 99.3 document fits into the overall context of  
13 reporting to the Commission, and this includes reporting  
14 to the Commission Tribunal, reporting to CNSC staff and to  
15 the public.

16 So there are three main mechanisms for  
17 reporting, and they really have different audiences and  
18 different purposes. As can be seen by the diagram, there  
19 is often overlap between the three mechanisms, so I'll  
20 quickly go through those mechanisms.

21 The first is mandatory reports that are  
22 submitted by licensees to the CNSC under the *Nuclear*  
23 *Safety and Control Act*, its regulations or regulatory  
24 documents such as the 99.1. These include both reports to  
25 demonstrate continued compliance with licence conditions

1 such as annual or quarterly compliance reports and events  
2 report -- event reports that are submitted to inform CNSC  
3 of a particular event or occurrence that represent a  
4 deviation from normal operation.

5 The mandatory reports are often highly  
6 technical in nature, with prescriptive reporting criteria,  
7 and they form a key part of the CNSC's overall compliance  
8 verification.

9 The second mechanism is that the CNSC staff  
10 reports to the Commission Tribunal on events or issues of  
11 a significant nature through the Early Notification  
12 Report.

13 I note there's an error on the slide. It  
14 should say "Early Notification" not "Event Notification".

15 You've seen an example of those two earlier  
16 today.

17 These are normally based on safety and  
18 significance criteria, but there is also some judgment  
19 that allows staff to bring forward things that can be of  
20 public interest or have generated public interest.

21 Ninety-nine point three (99.3) document  
22 formalizes the third type of reporting, which is timely  
23 reporting by licensees to the public, and this is based on  
24 public disclosure protocols that are designed to fit the  
25 needs of its target audience and, in this case, the

1 reporting criteria needs to remain flexible to accommodate  
2 the stakeholder input and also allow the use of judgment.

3 Licensees are expected to present  
4 information in a manner that is understandable to the  
5 public, preferably using plain, non-technical language,  
6 which can be a large difference from the mandatory  
7 reports.

8 The reporting for -- under the public  
9 information can employ multiple communication vehicles  
10 and, really, to enhance public understanding and  
11 information. These include the web, press releases,  
12 newsletters or other print material, but it could also, in  
13 some cases, can be through meetings, town hall type  
14 meetings.

15 While as expected -- and noting there's an  
16 overall note that while it's expected the most public  
17 disclosure reports would be from licensees, CNSC staff  
18 routinely reviews the information received from licensees  
19 and we will continue to publicly release information on  
20 our website on events or issues that are deemed  
21 appropriate.

22 So we always have the extra mechanism of  
23 overriding all these and going directly to our website  
24 that we've done routinely over the last couple of years.

25 So the rest will concentrate on, actually,

1 on the RD-99 document.

2 Again, the objective is to clarify the  
3 requirements and make sure that this is -- this meets the  
4 public interest and the perceived level of risk of a  
5 nuclear facility.

6 The public information program developed  
7 under this part of the document -- under this document  
8 intended to improve the level of understanding by the  
9 public about the proposed or licensed nuclear facilities  
10 and we -- hopefully, that we'd be able to increase the --  
11 establish an atmosphere of openness, trust and  
12 transparency between the public and the licensee.

13 Licensees and applicants are encouraged to  
14 adopt the most appropriate and effective means of  
15 communication. Each public information program and its  
16 disclosure protocol should be designed to address the  
17 information needs of the target audience, but also take  
18 into consideration what similar facilities are doing.

19 So there are some underlying principles  
20 that -- to have licensees, one, define their target  
21 audience and then understand the information needs of that  
22 audience and identify the best means for communicating it.

23 We have -- while we have not included a  
24 prescriptive list on -- in the document of what should be  
25 disclosed, we have provided very clear guidance on what we

1 would assume would be normally disclosed. And it's not  
2 prescriptive because we want it to remain flexible and be  
3 adaptive to certain situations, but we would expect each  
4 program to explain why they would not do something on the  
5 guidance list.

6 This is similar to how we use other  
7 guidance and said, "This is what we expect. If you want  
8 to propose something different, you should justify why  
9 you're doing something different".

10 There's also the need to develop a  
11 disclosure protocol, and this is to make sure there are  
12 clear rules that are available to the public about what  
13 will be disclosed and what are the criteria for those --  
14 that disclosure.

15 And again, this is really make sure there's  
16 transparent criteria and measurable criteria as well.

17 In terms of what consultation has been done  
18 on this one, this document has been under development for  
19 a while and has gone through a number of consultation  
20 periods, so there was a formal consultation in the fall of  
21 2010 and then we actually -- we posted the comments that  
22 were received for additional feedback about a year ago.

23 During these one -- two rounds, we had 61  
24 comments. Following the August 2011 Commission meeting,  
25 there again, we went out again for an additional round of

1        comments. During this period, we received 30 additional  
2        comments.

3                    So we've reviewed all the comments and  
4        we've given them due consideration in finalizing the  
5        document. The attached Commission Member document  
6        includes a disposition table of all the comments.

7                    But I would like to go through the key  
8        comments and how they have been addressed.

9                    The first comment we look at was there were  
10       comments from the stakeholders that the documents were too  
11       prescriptive in nature for certain types of facilities.

12                    CNSC staff have agreed with this one and,  
13       again, this is why we've gone and made sure that the  
14       prescriptive list is more of a guidance list, highly  
15       recommended guidance rather than a mandatory list, and  
16       that the licensees can justify not doing things on that  
17       list in their programs.

18                    But the document does require users -- the  
19       licensees to gauge the public perception of risk and the  
20       level of interest for the facility through discussions  
21       with stakeholders.

22                    The results of these discussions should be  
23       -- must be used in developing the public information  
24       program, and we really expect this to be an auditable  
25       process so that we can go back and confirm that they have

1 addressed the input they've received from the public.

2 The second concern was around whether  
3 questioning of the public disclosure would contradict or  
4 be in conflict with other regulatory requirements. This  
5 is mostly around financial security regulations.

6 So we've clarified the document to make  
7 sure that -- to indicate that it does -- the public  
8 disclosure information should not conflict with  
9 regulations under any other regulatory body.

10 But again, we would expect that the  
11 licensee document the rationale behind their decision to  
12 act in a certain way. So if they are balancing different  
13 regulatory needs, their public information program and  
14 their public disclosure protocol should be very clear that  
15 they are making such a balance and would explain to the  
16 public why some information may unlikely and necessarily  
17 be maybe a delay in releasing some information. We don't  
18 see a situation where it would require -- where it would  
19 change what was released but there may be delays to meet  
20 all regulatory requirements across the board.

21 The third one was that while there had been  
22 a lot of discussion about what the document applied to,  
23 and this is really around the Class II facilities, that  
24 the document wasn't very clear about this one, and this is  
25 really specific around the application to Class II

1 facilities.

2 Based on discussions and input, we have  
3 made it clear that the document would not apply to Class  
4 II licensees, such as hospitals and cancer treatment  
5 centres, but would apply to facilities that are more  
6 industrial like the use for non-hospital cyclotrons, pool-  
7 type of radiators and research accelerators.

8 Again, the document is designed to be  
9 flexible and graded to the needs of these types of  
10 facilities. So it's not one size fits all but it's one  
11 approach fits all.

12 The last one is there were lots of comments  
13 around the difficulty in quantifying terms such as target  
14 audience, public perception of risk and public level of  
15 knowledge. We recognize that this is the case and then  
16 provided additional guidance on how you could measure  
17 these terms.

18 One of -- but one of the things that -- one  
19 of the objectives of the document, is to address knowledge  
20 gaps that may perceive between what would be a scientific  
21 view of the risk and what the public perception of the  
22 risk is. So we have provided guidance to assist licensees  
23 in accurately evaluating the characteristics of their  
24 stakeholder knowledge.

25 But it also means that any public

1 information program, to be useful, has to routinely go  
2 back and re-measure what the public thinks and remain  
3 flexible to changes in public level of knowledge as well  
4 as perceptions of risk.

5 Just going back to something I said at the  
6 beginning, just to stress this one, that for most nuclear  
7 facilities there is a public -- a good public information  
8 program in place and that good practices are already used  
9 and that we have seen good implementation of the voluntary  
10 public disclosure of events.

11 So in this sense these licensees are  
12 largely already in compliance with the requirements of  
13 this document.

14 To give you a -- and as noted, as well, the  
15 approach has been proven successful at AECL's Chalk River  
16 Laboratories. This approach actually led to a notable  
17 decrease in information requests from the public to both  
18 AECL and the CNSC around the vessel repair and we believe  
19 that it also led to some increase in the public trust.

20 So this experience have led CNSC staff to  
21 conclude that implementation of this approach will  
22 significantly contribute to our mandate for dissemination  
23 of objective and timely public information.

24 Implementation we are proposing to do in a  
25 stage manner. We have -- where we have concentrated our

1 effort to date on the voluntary agreements has been on the  
2 -- what we perceived as the higher risk facilities in  
3 terms of public interest.

4 This means that there are some facilities,  
5 for example, the SLOWPOKE reactors based at universities  
6 where we have not had a lot of discussion around what is  
7 appropriate public information program for those  
8 facilities.

9 We have started those discussions but they  
10 are not complete so we are again proposing to do a risk  
11 informed approach to implementation over about a year  
12 period.

13 For power reactors there was already  
14 reference in their licence condition handbook to the  
15 guidance document G2-17, so we can relatively quickly  
16 amend that to make reference to RD/GD-99.3 as a guidance  
17 document and then we would also look at amending the power  
18 reactor licenses within about a six month period.

19 For other Class I facilities these are  
20 facilities like Atomic Energy of Canada's Chalk River  
21 Laboratories, Cameco facilities at Port Hope and the GE  
22 Hitachi Fuel Fabrication facilities. These ones have a  
23 licence condition already saying they must have a public  
24 information program including public disclosure. So the  
25 99.3 becomes the expectation document for this one that we

1       could update the licence condition handbooks almost  
2       immediately after it is issued.

3               Some of the other ones, like the SLOWPOKES  
4       that I mentioned, we will -- all of them are coming up for  
5       renewal or amendment within about a year and we would  
6       include those public information requirements at that  
7       time.

8               For uranium mines and mills we also are in  
9       -- I've already initiated discussions with these licensees  
10      about a major licence reform, similar to what has been  
11      done for the Class I facilities. So we are working  
12      towards having this reform in place for the licence  
13      renewals in 2013. All of those -- most of those licences  
14      will be renewed in 2013 or for the other ones there will  
15      be -- or are already planned amendments on the books.

16              So we would again introduce these licence  
17      conditions at that time, recognizing that many of the  
18      elements of the public information and public disclosure  
19      are already in place.

20              For Class II facilities these licences are  
21      issued by a designated officer. CNSC staff will develop  
22      implementation strategies in consultation with licensees  
23      and the licensees will be amended by the appropriate  
24      designated officer in conjunction with planned renewals.  
25      Again, all updated -- all licensees are planned to be

1 updated in 2013.

2 I would like to note that staff will be  
3 using this document as soon as it is approved as our basis  
4 for reviewing public information programs that are  
5 included in licence applications for existing licensees or  
6 proposed -- or proponents, and it will also be available  
7 to licensees to inform development of their programs.

8 Finally, the last topic is thus in terms of  
9 compliance. We look in terms of compliance again as a  
10 graded approach that will take into consideration the type  
11 of facility and activities being regulated, the risks,  
12 both actual or perceived, to the public to help public  
13 health, safety and security and the environment posed by  
14 the facility, an extent of public input that has been --  
15 has gone into the program and the level of public interest  
16 or concern around the facility from our perspective.

17 As noted, once published 99.3 will  
18 supersede the guidance document G2-17 and we will be  
19 retiring that document.

20 So, just in conclusion, CNSC staff are in  
21 the opinion that 99.3 has been developed following a  
22 rigorous process and that due consideration has been taken  
23 of stakeholder input. We conclude that it is now -- the  
24 document is now fit for use for regulatory oversight of  
25 nuclear facilities and recommend that the Commission

1 approve this document and take note of our licensing and  
2 compliance approach that we propose.

3 Thank you.

4 **THE CHAIRMAN:** Thank you.

5 Mr. Tolgyesi?

6 **MEMBER TOLGYESI:** Merci monsieur le  
7 président. Sorry, I will say that in English, because  
8 it's the same in French. When you are talking about  
9 targeted audience and public, as legislator never speaks  
10 to say nothing. When it says something, it means it's a  
11 distinction between.

12 Now, distinction between targeted audience  
13 and public is just we would like to enumerate them or  
14 because it's a different treatment of these two audiences?

15 **MR. ELDER:** Peter Elder, for the record.

16 It's a -- we settled on this term based on  
17 feedback and also our experience. I think initially we  
18 talked about local audience and realized that in some  
19 facilities there isn't really a local audience. An  
20 example would be the uranium mines in northern  
21 Saskatchewan. It's a regional audience rather than a  
22 local.

23 So this can vary from facility to facility,  
24 based on situation, and what we really want the licensee  
25 to do is define who their target audience is and let

1 people comment on whether they've got it right or not.

2 It's a fluid thing, but you know, we wanted  
3 to make sure that they were addressing what we considered  
4 to be the most impacted stakeholders of the facility. And  
5 we used target because local could be interpreted as being  
6 very close, and some places the impacted audience is  
7 actually not that close.

8 **MEMBER TOLGYESI:** Does it mean that if the  
9 site is somewhere up in, I don't know, say, not Chalk  
10 River, but we were licensing last time -- I'm sorry? No,  
11 Blind River.

12 Does it mean that if there is an interest  
13 or somebody who wants to comment and he's coming from  
14 Toronto, how do you process that? Because they are not  
15 necessarily affected or interested, what do you do with  
16 them?

17 **MR. ELDER:** Peter Elder, for the record.

18 I think what we're trying to do is give  
19 more priority to the comments received from your closer  
20 stakeholders because these are ones -- we want to make  
21 sure that you're giving information to the people who can  
22 be impacted by the operation of the facility.

23 So you wouldn't necessarily ignore a  
24 comment from Toronto, but you would consider that if you  
25 got a comment from the Town of Blind River, which is 10

1 kilometres away, it may have more weight than a comment  
2 that comes from 300 kilometres away.

3 Recognizing, again, in some areas you may -  
4 - there are people that are interested in developments in  
5 northern Ontario and, you know, we try -- we're not saying  
6 you ignore the person in Toronto, but most of the programs  
7 already have a defined target audience and we want to make  
8 sure that's clear to everybody what that is.

9 Everybody signs a program saying this is  
10 what I'm going to do, and often it's not very clear to  
11 anybody, it's not very transparent what that audience is,  
12 so we would like to make sure that audience is  
13 transparent.

14 **MEMBER TOLGYESI:** On your Slide 15, you are  
15 talking about target audience, public perception of risk  
16 and public level of knowledge. And you are saying that  
17 the items were modified that qualitatively could be  
18 measured.

19 Could you be more specific which criteria  
20 may be used to qualitatively measure the public perception  
21 of risk and, say, the public level of knowledge?

22 It's Slide 15.

23 **MS. LOCATELLI:** Sunni Locatelli, the  
24 Director General of Strategic Communications Directorate,  
25 for the record.



1 plain language and in a timely fashion so that the  
2 audience has -- they will be required to identify how they  
3 determine that audience and how the information has been  
4 packaged appropriately and in plain language.

5 **MEMBER TOLGYESI:** What I think when it's  
6 coming to, you're saying which type of knowledge or  
7 information they need, that will become important when  
8 you're talking targeted audience and public and from where  
9 they are.

10 And my last question, Mr. Chairman, is that  
11 on your Slide 8, the last line you are saying that:

12 "...reporting criteria based on  
13 judgment of public interest."

14 Who will establish these criteria? Who  
15 will decide that it's in the public interest or how far is  
16 in the public interest?

17 The last line on your Slide 8.

18 **MR. ELDER:** Peter Elder, for the record.

19 As we said in the presentation, we would  
20 expect these criteria to be discussed with their  
21 stakeholders, and give you an example of how AECL  
22 approached this for Chalk River.

23 They have a group that's called their  
24 Environmental Stewardship Council that includes members of  
25 environmental groups, business community, local business

1 community, the local municipal representatives and some  
2 other interested people.

3 And they went to that council and said,  
4 "This is what we propose; what do you think, or is  
5 something missing?" so that there's some way to get that  
6 feedback.

7 The judgment call comes in through that we  
8 don't want it to be it's on my list and if it says, you  
9 know, a leak of 10 litres of heavy water and I'm at 9.95,  
10 I don't need to release it. I mean, we want to make the  
11 licensees think about this is to inform the public to be  
12 proactive on this one. Use your judgment on where you  
13 think you need to be proactive and don't have a list that  
14 is frozen and, if it's not on my list, I don't have to do  
15 anything.

16 So judgment in that sense is that always to  
17 say there is some judgment.

18 And this is differentiated between  
19 regulatory reporting where we say you must report A, B, C,  
20 D, and if it's not on the list, you don't have to report.

21 On this one, we want to make sure there is  
22 flexibility and we also expect there to be interaction  
23 with the stakeholders in developing -- there should be  
24 some sort of lists, but they're not frozen criteria.

25 And the example we have of it working is

1 they have a criteria -- AECL has criteria, they're  
2 published, but they also reserve the judgment to do  
3 additional reporting. And they go back to their group and  
4 ask on a regular basis how we're -- how are they doing.

5 **THE CHAIRMAN:** Okay.

6 Dr. McDill?

7 **MEMBER McDILL:** Thank you.

8 I can see that, for example, the audience  
9 around Chalk River would be a very different audience than  
10 the one around Port Hope, so it's going to be a big  
11 challenge for these facilities to adapt their public  
12 information program to the needs of their public.

13 I have a sense from reading the feedback  
14 that there isn't a total buy-in from industry. Maybe  
15 there doesn't need to be because we're the regulator.

16 One of the things I noticed was the feeling  
17 that there would be a lot of duplication of reporting, and  
18 that was one thing that you didn't bring up in your  
19 reviewer's comments, so perhaps you could comment on it  
20 now.

21 **MR. ELDER:** Peter Elder, for the record.

22 In terms of duplication, I think there will  
23 be some duplication of reporting, but since you are  
24 looking for, actually, fundamentally different reasons and  
25 to different audiences.

1                   We've had a lot of experience with  
2                   licensees making available their detailed technical  
3                   reports. It gives the public information, it doesn't  
4                   necessarily add clarity and we think that it's better to  
5                   actually -- you may, in some cases, actually have two  
6                   products: the technical report and the non-technical  
7                   version that is communicated to the public.

8                   Our experience with AECL working under this  
9                   type of regime for, really, almost close to four years now  
10                  is the number of reports hasn't -- of events has not been  
11                  that extensive.

12                 They did a lot around one event and there  
13                 was a large amount of public interest in that event  
14                 because it impacts well beyond the local community.

15                 But in terms of a routine basis, they have  
16                 not been -- it hasn't been a huge reporting burden on  
17                 them.

18                 **MEMBER McDILL:** And what about the smaller  
19                 facilities for whom the duplication -- the smaller  
20                 facilities, for example, might want reporting to be ALARA,  
21                 you know, As Low As Reasonable Achievable.

22                 I don't mean to put a pun on words but I  
23                 think we could make that argument.

24                 **MR. ELDER:** Peter Elder, for the record.

25                 And I -- the process actually allows them

1 to make the argument.

2 That said, let's give example of the  
3 reactor at McMaster which is one of the larger "small  
4 facilities", let's say. They don't report a lot of events  
5 to us. I mean, the last one that they reported to us also  
6 became an ENR and we were discussing in front of the  
7 Commission, you know.

8 The amount of extra work -- I mean, we're  
9 talking about, on these facilities and going back in --  
10 this is not like power reactors that are reporting under  
11 the mandatory reporting 100 of things a year, we're  
12 talking about two or three things a year.

13 So, you know, the volume is very different  
14 and -- but we do and will allow discussions about what is  
15 appropriate.

16 But we also want them to go out and canvass  
17 their local interest as well.

18 **THE CHAIRMAN:** I think a better example was  
19 the GE facility, the last time. I don't know if I would  
20 call it "small" but it's smaller than ...

21 And I think that there was an  
22 underestimation of the pent-up demand for information by  
23 the community is what I recall.

24 **MR. ELDER:** That's correct.

25 And we would like a process in place where

1 they know that before it shows up in front of a public  
2 hearing and have it designed to address it and not find  
3 out about it during the hearing.

4 **THE CHAIRMAN:** Dr. McDill?

5 **MEMBER MCDILL:** Thank you.

6 One more question: CAMECO made the  
7 comment, General Comment No. 5, and staff responded that  
8 it would not use -- that may be of interest to the public  
9 and would use instead "where the public has an interest to  
10 know".

11 And I've noticed on page 5 of the -- of the  
12 document that "Items of Interest to the Public" has been  
13 retained under Section 2.2.5.

14 That may just be a place where it couldn't  
15 be changed? I thought I would ask about it.

16 It's right underneath 2.2.5, on page 5.  
17 It's the third line down.

18 **MR. BELYE:** Yeah. It's Sean Belye, for the  
19 record.

20 I believe that was in Cameco, the first  
21 round that we did that and, as the document evolved, we  
22 did play with the wording a little bit.

23 But I think it's -- it represents a clear  
24 representation of what we're looking for.

25 **MEMBER MCDILL:** Thank you, Mr. Chair.

1                   **THE CHAIRMAN:** Thank you.

2                   Dr. Barriault?

3                   **MEMBER BARRIAULT:** I guess -- I know it's  
4                   been going around and I'm not clear if it's determined  
5                   what is the level of public interest and concern.

6                   I guess what I'm concerned of -- and I  
7                   think Dr. McDill alluded to it -- if they apply the ALARA  
8                   principle to what they're going to tell people then  
9                   they're not going to tell people a whole lot of stuff and  
10                  I'm concerned that we don't have a mechanism as to who  
11                  determines what should be out there and what should be  
12                  published.

13                  The danger I see is that, after a while,  
14                  they won't tell the people anything until something  
15                  dramatic happens and, then, they have to disclose.

16                  So is there a mechanism in place to explain  
17                  what is the minimum amount of information that should be  
18                  given?

19                  **MR. ELDER:** Peter Elder, for the record.

20                  This comes back to a little -- having rules  
21                  that are written down. That means that we can do  
22                  compliance verification and, even if it's just the noting  
23                  that one licensee is doing something very differently than  
24                  another one on a similar facility, we can be able to push  
25                  the one licensee that we feel not doing enough.

1                   It's a lot easier to push if you've got  
2 actually written guidance that says: "This is what we  
3 expect you to do."

4                   **MEMBER BARRIAULT:** Is there a mechanism to  
5 do that in the licence?

6                   **MR. ELDER:** In the -- well, this is why we  
7 believe that there should be a mechanism to say: "You've  
8 got to ..."

9                   You know, once you've said: "You have to  
10 have a Public Information Program.", it's for a reason and  
11 this then document says: "This is what the reason is."  
12 and you should be able to demonstrate that one.

13                   **MEMBER BARRIAULT:** Okay.

14                   **MR. ELDER:** It gives us -- in my view, as I  
15 said, it gives us a much better compliance tool as well.

16                   **MEMBER BARRIAULT:** Thank you.

17                   Thank you, Mr. Chairman.

18                   **THE CHAIRMAN:** Thank you.

19                   Ms. Velshi?

20                   **MEMBER VELSHI:** Thank you, Mr. Chair.

21                   As I was looking at the comments, I was --  
22 I find it rather ironic and, frankly, a little  
23 disappointing that we got no comments from the public or  
24 the other stakeholders to this document and it was only  
25 from industry.

1                   So the question more is: Did we actually  
2 go and solicit comments from, you know, the media or who  
3 else we see as key stakeholders to this document?

4                   **MR. DALLAIRE:** Mark Dallaire, Director of  
5 the Regulatory Policy Directorate.

6                   This document was published on our website  
7 and that we have push-out e-mail to all of our subscribers  
8 who asked to keep up to date with Commission business and  
9 that includes members of the public who have asked to be  
10 on our subscribers' list.

11                   We did follow a standard process and it is  
12 not unusual not to receive comments from the general  
13 public. Most of the comments on our regulatory documents  
14 do come in from industry who are mostly affected by -- by  
15 an initiative that we're pursuing.

16                   **THE CHAIRMAN:** Just elaborate a little bit  
17 about the push.

18                   Who is on this? Sixteen hundred (1600)  
19 names, if I know -- include the media. Go ahead.

20                   **MS. LOCATELLI:** Sunni Locatelli, for the  
21 record.

22                   We do have several media institutions that  
23 are on the subscription list and would have received this  
24 indication. Both would have been pushed out to them  
25 during the consultation process and, as well, through the

1 Commission hearing process they would have been informed.

2 There are also members of nuclear  
3 organisations, environmental organisations and there are  
4 general members of the public as well.

5 **MEMBER VELSHI:** Yes, because this is not  
6 like other typical regulatory documents, this is  
7 something, hopefully, very close and near to their heart.

8 If we can turn to page 3 of the CMD,  
9 please, it may be more clarification for me.

10 Under "Background", the last bullet: "...  
11 where the requested information overlapped with the  
12 mandate of the CNSC disclosed that information to the  
13 target audience."

14 Can you just tell me what that means,  
15 "information overlaps with the mandate of the CNSC"?

16 **MR. ELDER:** Peter Elder, for the record.

17 It was -- there may be some -- some -- we  
18 were saying in terms of what we are requiring is that,  
19 actually, it's related to the health, safety, security and  
20 the environment.

21 The public may be very interested in job  
22 opportunities and, while they may -- and we're saying  
23 that's optional to the licensee whether they do that or  
24 not but -- so that's when we said it's related to the  
25 mandate of the CNSC and the license activities.

1           And we give the example of employments,  
2           lay-offs and things like that one as something that they  
3           may want to do as a good community member and give  
4           announcements around that one but that's not what the  
5           purpose of disseminating information around the licence  
6           facility is about.

7                       **MEMBER VELSHI:** Okay, thank you for the  
8           clarification.

9                       So it leads me to my second point: The  
10          CNSC has a mandate to disseminate information and how do  
11          the principles in this document apply to the CNSC?

12                      You know, does this regulation apply to the  
13          CNSC that it also identifies its target audience and what  
14          they want to hear from the CNSC?

15                      **MS. LOCATELLI:** Absolutely.

16                      These are -- the principles here are based  
17          on the guidelines out of the original G-217 document to  
18          which the CNSC did adhere as well. It's the process and  
19          the mechanism we used.

20                      We actually proactively inform the public  
21          of events, very similar to the process identified here, in  
22          a timely manner.

23                      If by chance the licensees aren't informing  
24          the public in what we would consider a timely manner, say  
25          within 48 to 72 hours of an event, we do proactively

1 inform the public. We then link to the licensees and  
2 information that they provide when they provide it.

3 But initially our purpose for this document  
4 is to ensure that the licensee is doing their job within  
5 the community.

6 **MEMBER VELSHI:** Okay so in the scope the  
7 CNSC is not specifically identified as who this applies  
8 to? I mean I hear what you say and that you have your  
9 internal requirements that drive that.

10 My third question and last one for now is  
11 are there any learnings from the Fukushima incident around  
12 crisis communication that have been incorporated in this  
13 document?

14 **MS. LOCATELLI:** Sunni Locatelli, for the  
15 record.

16 Of course the premise of the lessons  
17 learned from Fukushima is that timely information -- key  
18 plain language information in a package that is  
19 interpretable to the public was one of the key drivers or  
20 key success stories out of our Fukushima response and  
21 those indications have been built into this document.

22 **MEMBER VELSHI:** Thank you.

23 See, if I look at page 7 of the document it  
24 -- so it's just a follow-up question on that, of the -- of  
25 RD-99.3 where it gives examples of what to include. Would

1       you expect the licensee to share with -- and I know this  
2       is dependent on what the public wants to hear or what  
3       their target audience wants to hear but incidents at other  
4       facilities and what that may mean for this specific  
5       facility? Is that a piece of information you would have  
6       in there, you know things to discuss with the public?

7                   **MS. LOCATELLI:** Sunni Locatelli, for the  
8       record.

9                   Well there have been incidences in the past  
10       where there has been a major incident. I'm thinking of  
11       the alpha incident at Bruce Power where other licensees  
12       actually did engage their target audiences because there  
13       was concern within their community that this could happen  
14       here and that there was proactive information provided to  
15       the public as to the possibility of that event happening  
16       at their facilities.

17                   So the short answer to your question is  
18       that yes, if there were an incident at another facility  
19       that could potentially have an impact or could cause  
20       concern to their target audience, they would be expected  
21       to inform the public of that.

22                   **MEMBER VELSHI:** Yeah, it's just not  
23       something that is specifically identified in your list of  
24       -- in your laundry list here.

25                   **THE CHAIRMAN:** Thank you.

1 Monsieur Harvey?

2 **MEMBRE HARVEY:** Merci monsieur le  
3 président.

4 A first point is about the word -- you  
5 received a comment from the Canadian Nuclear Association  
6 about the disclosure and it might be difficult for me,  
7 disclosure to see the connotation in English but in French  
8 is « divulgation est très liée au -- dévoiler des  
9 information secrètes ou méconnues. »

10 So I suppose you have considered that point  
11 and you discussed that point before to put that title in  
12 your document.

13 I'm just saying just the title of your  
14 document is disclosure to the public and « dévoilement »  
15 in French and those words are « une connotation négative »  
16 for the public. It's like you're informing the public  
17 about the secret information or something like that.

18 So I'm just asking, have you discussed that  
19 and you decided that it was okay like this?

20 **MR. DALLAIRE:** It's Mark Dallaire, for the  
21 record.

22 I'm not aware that that particular issue  
23 was raised during the drafting. The document was  
24 translated by Government of Canada's Translation Bureau.

25 But we will take your comment back and

1 actually look at that question before final publication to  
2 see whether there is a negative connotation that is not  
3 consistent -- or to make sure that the connotations in  
4 French and the English version are correct.

5 **THE CHAIRMAN:** But the English disclosure  
6 is ---

7 **MEMBER HARVEY:** It's okay.

8 **THE CHAIRMAN:** --- it's -- c'est la même  
9 chose. Its disclosure because in the nuclear industry --  
10 the history of nuclear industry that everything is a  
11 secret. And we're trying to ---

12 **MEMBER HARVEY:** That's my point.

13 **THE CHAIRMAN:** I know.

14 **MEMBER HARVEY:** That's my point. Not to  
15 ---

16 **THE CHAIRMAN:** But the public view it is  
17 anything you don't disclose ---

18 **MEMBER HARVEY:** It raised the problem.

19 **THE CHAIRMAN:** Yeah but everything you  
20 don't disclose is -- something is wrong.

21 You heard today about the little incident  
22 in Bruce Power. And you had to go and explain to the  
23 public that, you know, there was not a major kind of an  
24 incident here.

25 So we've been using -- and Parliamentary

1 -- by the way Parliamentarian also use the word "proactive  
2 disclosure" all the time in this lingo.

3 We'll check with our -- même si en  
4 français, c'est différent. Je pense que non, mais ---

5 **MEMBER HARVEY:** No, I think it looks almost  
6 the same but for the public, it's this negative  
7 connotation. I mean it might be not so important but ---

8 **THE CHAIRMAN:** But the public information  
9 program is more aware the positive side will be and the  
10 web application; those are the -- what's could be ---

11 **MEMBER HARVEY:** Communication.

12 **THE CHAIRMAN:** Communication.

13 **MEMBRE HARVEY:** Diffusion, communication,  
14 des choses comme ça.

15 It's just a comment.

16 My second point is just following Mrs.  
17 Velshi's comment about the « la Commission a pour mission  
18 d'informer » and to what extent this mission is correctly  
19 supported by those disclosures.

20 I'm saying that because the accuracy of the  
21 information has to be -- because in some cases the public  
22 is not -- there's no need to communicate but you say there  
23 will be some communication but that communication has to  
24 be accurate.

25 How -- because if it's not accurate it's

1 going to against the mission of the Commission. It has to  
2 provide accurate information to the public.

3 So will that increase the work for the  
4 Commission to verify and to assure -- to be assured that  
5 the communication will be accurate?

6 **MR. ELDER:** Peter Elder, for the record.

7 One of the things that we did put in is  
8 make sure that they do -- they have to inform us before  
9 they make some -- any disclosure so that we're in a  
10 position to verify the accuracy of this.

11 I think there's a balance in terms of  
12 workload. We are doing a lot of review of a lot of  
13 events, trying to -- you know, trying to see whether we  
14 should be doing something or not.

15 We would like to transfer, frankly, most of  
16 that initial review back to the licensee and make them  
17 have criteria, whether they can follow it.

18 Yes, there will be some work to make sure  
19 that they are giving out accurate information. But we  
20 always -- our practice has been is when disclosure is  
21 made, we make a link to it on our website and that gives  
22 us the opportunity in that link to clarify any points we  
23 believe need to be clarified. And we've also done that as  
24 well to put the regulatory perspective on the information  
25 as well.

1                   **MEMBER HARVEY:** But you said you will be  
2 informed but that wouldn't be a systematic approval of all  
3 the documents.

4                   **MR. ELDER:** We don't want to -- it's their  
5 program, we would like to be in position to come back and  
6 say -- no, we'd like to be informed so that we can correct  
7 things that need to be corrected, both from a compliance  
8 perspective and tell the licensee that was a little -- you  
9 know -- not fully accurate but also to make sure that if  
10 we need to clarify something on our website or to the  
11 Commission that we are in position to do so.

12                   **MEMBER HARVEY:** Okay.

13                   I would like you to elaborate a bit on page  
14 3, on the French, might be page 3 in the English version,  
15 about the -- in French it's written:

16                               « Le programme d'information publique  
17                               et le protocole de divulgation  
18                               devraient être gérés afin de s'assurer  
19                               qu'ils continuent de satisfaire leurs  
20                               objectifs juridiques, sociaux,  
21                               politiques et d'entreprise. »

22                   That's a lot of things to consider when you  
23 write the information but what do you mean?

24                   Because satisfying the -- some of those  
25 things, well you might be -- I'm just questioning the

1 accuracy of the information. If the information is based  
2 on the facilities' objectives, then ---

3 **MS. LOCATELLI:** Sunni Locatelli, for the  
4 record.

5 We have several mechanisms for verifying  
6 the accuracy.

7 The licensees will now, under this  
8 protocol, be required to post up their public disclosure  
9 protocol, so the public will now be able to see what it is  
10 they have determined.

11 For our own mechanisms, under G-217, we  
12 have already been using several mechanisms to validate.  
13 We'll be reviewing their identification of their target  
14 audiences and the rationale for how they identified those,  
15 their information products, their consultation records for  
16 public information programs, surveys, public opinion  
17 research; all that will be used to verify that we feel the  
18 licensee is providing the accurate and timely information  
19 that they committed to doing when they met with their  
20 target audiences.

21 **MEMBRE HARVEY:** Ça va, monsieur le  
22 président.

23 **THE CHAIRMAN:** Okay. Any other comments?  
24 Well, let me just say that ---

25 **MEMBER HARVEY:** Just one small thing. In

1 2.3.3, last paragraph:

2 « Les copies d'information publique  
3 divulguée qui sont envoyées à la CCSN  
4 devraient être adressées au point de  
5 contact approprié avec ... »

6 Pourquoi pas là, vous avez mentionné « les  
7 droits devraient » -- et dans ce cas-ci, c'est  
8 « devraient » -- it's not an obligation because you are  
9 directing they should go to -- where should the  
10 information go inside the CNSC and it's 2.3.3, last  
11 paragraph.

12 I'm sorry because I'm in the French  
13 version, but the English ---

14 **M. ELDER:** C'est bon. Juste pour vérifier  
15 la question, est-ce que -- pourquoi est-ce que ce n'est  
16 pas ---

17 **MEMBRE HARVEY:** « Devraient » ---

18 **M. ELDER:** --- c'est parce que de temps en  
19 temps, le point de contact peut changer et dire que c'est  
20 pour chaque -- tous les permis, il y a un point de  
21 contact. Mais le -- c'est pas le -- dans le cas ici,  
22 c'est pas une obligation pour informer Monsieur X, c'est  
23 une obligation d'informer la Commission mais c'est  
24 normalement, c'est Monsieur X.

25 **MEMBRE HARVEY:** Mais si c'est une

1 obligation d'informer la Commission, ça doit être « doit »  
2 quand même?

3 **M. ELDER:** Oui.

4 **MEMBRE HARVEY:** "Doit être adressé au point  
5 de contact approprié. »

6 **M. ELDER:** Oui, mais si c'est dans le  
7 paragraphe ----

8 **MEMBRE HARVEY:** Précédent.

9 **M. ELDER:** --- précédent, et c'est les  
10 demandes « Les -- doivent tenir la CCSN informée. »

11 **MEMBRE HARVEY:** O.k.

12 **M. ELDER:** Donc, juste pour l'obligation et  
13 dans un paragraphe pour informer, mais l'autre est juste  
14 pour normalement, c'est au point de contact.

15 **MEMBRE HARVEY:** O.k. Je comprends. Merci.

16 **THE CHAIRMAN:** Okay. Anything else?

17 I know that we went through, I think, four  
18 rounds, if I calculate this correctly, and I have one  
19 industry guy sitting down there. And I want one answer.

20 Are you happy now; yes or no? And don't  
21 give me "maybe".

22 While you're walking in, I can tell from  
23 where I sit this is an enormous improvement, but putting  
24 in some guidelines for common sense. And I know that  
25 common sense is not that common.

1                   And I have to tell you that trying to  
2                   prescribe everything you do in this business is a mug's  
3                   game; will never happen properly. But the fact that you  
4                   need to worry about public information is crucial.

5                   I've been campaigning with this industry  
6                   the need to be a lot more proactive in explaining in your  
7                   case, your business case, in our case, the safety case.  
8                   And we have not done a good job about this, historically.  
9                   And with this document, hopefully there will be more  
10                  clarity about what needs to be disclosed and at least we  
11                  will see some improvement with interaction with our  
12                  stakeholders.

13                  So after my outburst here, Frank, what do  
14                  you say?

15                  **MR. SAUNDERS:** Frank Saunders, for the  
16                  record.

17                  We're in agreement with this document.  
18                  And, in fact, you know, as you say, the public awareness  
19                  programs are very important to us, and so we support where  
20                  the document is going.

21                  What I would say, and we've included in our  
22                  post Fukushima things, that there are other things beyond  
23                  RD-99.3 that need looking at.

24                  In our view, every piece of paper we file  
25                  these days in our new electronic age essentially might as

1 well be a press release to the public, so a lot of the  
2 ways we communicate is unnecessarily burdened with jargon  
3 and technical detail that's really not necessary to convey  
4 the event.

5 And so our comment would be that we really  
6 need to look beyond just what we report to the public and  
7 also look about how we report in general and whether those  
8 things are readable to a reasonably knowledgeable person.

9 And so good at this point, more to do, I  
10 guess would be our comment.

11 **THE CHAIRMAN:** Well, you just reminded me  
12 to -- I don't know if you're aware that CNSC now is on  
13 Facebook, and it's a whole different world here. And we  
14 will look forward to some input from you guys as to our  
15 Facebook and see how it's working and how -- whether  
16 anybody actually -- whether it's increased the readership  
17 of some of the material on it. It remains to be seen.

18 Okay. Any last word?

19 Thank you.

20 Thank you very much.

21 --- (A short pause/Courte pause)

22 **THE CHAIRMAN:** Okay. We have stamina,  
23 obviously. So let me move on to -- this is the -- let me  
24 find my way here.

25 Okay. The next item on the agenda is

1 regarding RD/GD-370, Management of Uranium Mine Waste Rock  
2 and Mill Tailings as outlined in CMD 12-M7.

3 I understand that we have Mr. Chris Doiron  
4 from Environment Canada who is in attendance. Thank you.

5 And -- but before we -- so he's available  
6 for questioning. But I understand right now we'll hear a  
7 presentation from CNSC, and I understand Dr. Thompson will  
8 make the presentation.

9 Please proceed.

10  
11 **5.2 - RD/GD-370 - Management of**  
12 **Uranium Mine Waste Rock and**  
13 **Mill Tailings**

14  
15 **12-M7**

16 **Oral presentation by**  
17 **CNSC staff**

18  
19 **DR. THOMPSON:** Good morning Mr. President  
20 and Members of the Commission.

21 Mon nom est Patsy Thompson. Je suis la  
22 directrice générale de la direction de l'évaluation et de  
23 la protection environnementale et radiologique.

24 With me today are Mr. Michael Rinker, who's  
25 the Director of the Environmental Risk Assessment

1 Division; Mr. Mark Dallaire, the Director General of the  
2 Regulatory Framework; Mr. Colin Moses, the Acting Director  
3 of the Regulatory Framework Division; and we also have the  
4 Director General of the Directorate of Nuclear Facilities  
5 and Cycle Regulation; and Mr. Jean LeClair, the Director  
6 of the Uranium Mines and Mills Division.

7 And as you've just noted, Mr. Doiron from  
8 Environment Canada is in attendance.

9 In November 2009, the Commission directed  
10 staff to develop a regulatory document for the management  
11 of waste rock and tailings that result from uranium  
12 mining.

13 Today we are presenting the regulatory  
14 document RD/GD-370, Management of Uranium Mine Waste Rock  
15 and Mill Tailings.

16 The document provides CNSC expectations for  
17 the management of mine waste at uranium mines and mills  
18 and guidance on how to meet these expectations.

19 RD/GD-370 as part of the CNSC continuous  
20 improvement in providing greater clarity in regards to  
21 regulatory requirements for the sound management of mine  
22 waste rock and mill tailings.

23 The presentation, as well as the  
24 information before the Commission are in support of the  
25 CNSC staff recommendation to proceed with the publication

1 of Regulatory Document RD/GD-370 Management of Uranium  
2 Mine Waste Rock and Mill Tailings.

3 In this presentation staff will present an  
4 overview of the document; provide background information  
5 regarding the management of mine waste at uranium mines  
6 and the legal basis under which the document is based.

7 We will present the recommended regulatory  
8 framework as provided in the document, discuss the results  
9 of public and stakeholder consultation, including how  
10 staff responded to comments that we received.

11 We will provide information on the  
12 publication and implementation of the regulatory document,  
13 and finally the staff recommendation for the path forward.

14 I will now ask Mr. Michael Rinker to  
15 continue with the presentation.

16 **MR. RINKER:** Good afternoon. My name is  
17 Mike Rinker, I'm the Director of the Environmental Risk  
18 Assessment Division.

19 Over the last decade the uranium mining  
20 industry has been a leader in Canada for the management of  
21 tailings and waste rock.

22 The modern mines in Saskatchewan have set  
23 the standard for best practice by using open pits for the  
24 management of tailings and the most problematic forms of  
25 waste rock. This best practice is referenced, including

1 in I.A.E.A. publications.

2                   However, CNSC expectations are not  
3 documented. In addition, uranium mining may be expanding  
4 to other jurisdictions such as Quebec and Nunavut and to  
5 other Proponents.

6                   Taking this into account and knowledge that  
7 Environment Canada is facing an increasing number of  
8 Proponents proposing tailings and waste rock management in  
9 Canada's freshwater lakes and streams, there is a need for  
10 the CNSC to communicate its expectations for the  
11 management of mine waste rock and tailings. RD/GD-370  
12 sets out these expectations.

13                   The scope of this document is the complete  
14 lifecycle of a mine or mill from site preparation and  
15 construction through to decommissioning. This document is  
16 relevant to new tailings or waste rock facilities at new  
17 and existing mines but would not encompass operation or  
18 modification to existing tailings or waste rock management  
19 facilities.

20                   In general, mining involves the movement of  
21 large quantities of rock when accessing the ore. The rock  
22 surrounding the ore may also contain elevated levels of  
23 metals and radionuclides that have been chemically or  
24 physically stable for millions or billions of years.

25                   However, the minerals in the rock can break

1 down and release metals and radionuclides to the  
2 environment when the rock is physically broken or milled  
3 and exposed to atmospheric oxygen and precipitation.

4           Nevertheless, the rates of release of  
5 metals and radionuclides from mine waste to the  
6 environment are not instantaneous and often difficult to  
7 predict. The release of contaminants to the environment  
8 may take years or decades before being observed and  
9 therefore management plans must be developed well in  
10 advance, must be based on appropriate scientific study and  
11 take uncertainties into consideration.

12           This proposed regulatory document is based  
13 on the provisions of the *Nuclear Safety and Control Act*  
14 and its Regulations. This document is also aligned with  
15 CNSC policy Documents P223 for protection of the  
16 environment and P290 managing radioactive waste.

17           Because the CNSC is not the only regulatory  
18 authority for the management of waste rock and tailings,  
19 the CNSC sought review and advice from Fisheries of Oceans  
20 Canada and from Environment Canada.

21           Based on advice received through this  
22 collaboration, the document is also aligned with the  
23 Fisheries Act and the Metal Mine Effluent Regulations  
24 established under the *Fisheries Act*.

25           A Proponent is required to obtain

1 authorization from the Minister of Fisheries and Oceans  
2 Canada based on recommendations from the Minister of the  
3 Environment for the amendment of Schedule 2 of the Metal  
4 Mine Effluent Regulations for mine waste management and  
5 natural water bodies frequented by fish.

6 Environment Canada has provided guidance  
7 that describes the process and the requirements for such  
8 authorization.

9 By aligning with Environment Canada's  
10 guidance RD/GD-370 ensures that only one assessment is  
11 required to have satisfied the needs of Environment  
12 Canada, Department of Fisheries and Oceans Canada, and the  
13 CNSC under a single coordinated environmental assessment.

14 As stated in this document, when making  
15 regulatory decisions concerning the management of uranium  
16 mine waste rock and tailings, it is the position of the  
17 CNSC that natural water bodies, frequented by fish, shall  
18 be avoided to the extent practicable for the long-term  
19 management of mine waste rock and tailings.

20 Tailing and mine waste rock shall be  
21 managed to maximize the use of mine workings such as open  
22 pits and underground developments and to maximize the use  
23 of natural and/or engineered barriers between the waste  
24 materials and the environment.

25 Tailings and mine waste rock management

1 plans shall be selected commensurate with risk posed by  
2 the characteristics of the mine rock or tailings. Such  
3 that, tailings and mine waste rock are managed in  
4 facilities that are designed to isolate and control the  
5 materials over the long-term.

6 Overburden and clean rock is used as  
7 construction material or as a resource, to the extent  
8 possible, and consistent with the concept of waste  
9 minimisation and reliance on institutional controls in the  
10 designs of tailings and mine waste rock management plans  
11 are minimised.

12 This document also provides guidance on the  
13 following: First, the assessment of alternatives. This  
14 document references Environment Canada's guidance document  
15 for metal mines on assessing alternatives for the  
16 management of tailings and/or waste rock if such waste is  
17 proposed to be managed in water bodies frequented by fish.

18 And second, for follow-up monitoring in  
19 adaptive management predicting releases to the environment  
20 from tailings and waste rock management facilities often  
21 indicate that the peak release would occur far into the  
22 future in the order of many years or decades.

23 Therefore, monitoring plans must be  
24 carefully designed to ensure that the key attributes of a  
25 facility are performing as expected and that adaptive

1 management plans can be put in place early, should actual  
2 performance of the facility not provide for adequate  
3 protection of the environment.

4 This regulatory document addresses these  
5 key aspects of mine waste management.

6 A discussion paper was posted for comment  
7 in the spring/summer of 2010. Comments were received from  
8 industry as well as members of the public. These comments  
9 were used to inform the development of a draft regulatory  
10 guidance document.

11 The draft document was posted for comment  
12 in the summer of 2011. All comments received were  
13 considered in the development of the document that is  
14 before the Commission today.

15 Comments suggested that the management of  
16 mine waste in a natural water body frequented by fish may  
17 sometimes be the best option. CNSC staff agree with  
18 elements of these comments, for example, some waste  
19 release metals and radionuclides at a much slower rate if  
20 the waste is managed under water because this limits the  
21 accessibility of oxygen to the waste.

22 However, underwater disposal has been  
23 successfully achieved by a variety of management options  
24 other than managing in a lake or a stream.

25 And finally, staff recognize that in

1 certain regions of Canada a natural water body frequented  
2 by fish may indeed be the best option.

3 This document does not ban such practice,  
4 rather, this document ensures that an evaluation of this  
5 type of proposal is aligned with the requirements of  
6 Environment Canada and the Department of Fisheries and  
7 Oceans Canada, is the best option for protecting people  
8 and for protecting the environment and is selected based  
9 on a rigorous and transparent process.

10 Several comments were received regarding  
11 the purpose, scope and definitions contained in the  
12 document.

13 Some comments indicated concern that the  
14 CNSC intends to expand the scope of Environment Canada's  
15 guidelines for the assessment of alternatives, such as  
16 requiring the use of these guidelines even when the  
17 preferred alternative would not include management of mine  
18 waste in a natural water body frequented by fish.

19 In response, CNSC staff altered the  
20 document to clarify that 1) the Environment Canada  
21 Guidance document must be used when a proponent is  
22 considering mine waste management in a natural water body  
23 frequented by fish.

24 And 2) the Environment Canada Guidance  
25 document is recommended to be used for other preferred

1 options. It is not mandatory. Other means of a  
2 transparent, robust alternative analysis would be  
3 considered in this case.

4 Finally, CNSC staff clarified that this  
5 document would apply to new mine waste management  
6 facilities whether or not these facilities are proposed  
7 for a new mine or mill or at an existing operation.

8 The terms and definitions used by  
9 Environment Canada, Fisheries and Oceans Canada,  
10 internationally and by the mining industry itself vary  
11 considerably. To ease interpretation of the document, a  
12 glossary was added that provides definitions for all  
13 relevant terms and allows for classification of different  
14 types of rock that result from mining. These classes  
15 encompass the relatively benign material that can be used  
16 as a resource such as overburden and clean rock to the  
17 more problematic mineralized waste rock that requires some  
18 management to protect the environment.

19 I will now return the presentation back to  
20 Dr. Patsy Thompson, the Director General for the  
21 Directorate of Environmental and Radiation Protection and  
22 Assessment.

23 **DR. THOMPSON:** Upon Commission approval,  
24 RD/GD-370 will be published and made available to existing  
25 licensees and proponents of new mining and milling

1 projects.

2 When relevant, the document could be used  
3 for the licensing basis, for example, the Licence  
4 Condition Handbook. But the way it is envisaged to be  
5 used and would be used more appropriately is it would  
6 inform applicants of CNSC's expectations in regards to the  
7 management of mine waste rock and mill tailings. This  
8 would ensure that CNSC requirements are considered by  
9 proponents when they are developing their environmental  
10 impact statement or licence applications.

11 RD/GD-370 would also form the technical and  
12 regulatory basis for staff's review of proponent  
13 documentation.

14 In conclusion, CNSC staff recommends that  
15 the publication of this regulatory document as it  
16 represents a significant improvement in clarifying  
17 regulatory expectations for the sound management of mine  
18 waste rock and mill tailings for protection of the  
19 environment in the long-term.

20 Overall, CNSC staff recommends that the  
21 Commission approve publication of the regulatory document,  
22 RD/GD-370.

23 This ends our presentation. We are  
24 available to answer questions.

25 **THE CHAIRMAN:** Okay. Thank you.

1 I think we are going to stretch at least  
2 one round, starting with Dr. McDill.

3 **MEMBER MCDILL:** Thank you.

4 We have Environment Canada here. We don't  
5 have DFO here. So perhaps I could ask for comments first  
6 from Environment Canada?

7 **MR. DOIRON:** Our experience in dealing with  
8 this issue actually dates back to 2006. The interesting  
9 thing in that context is, in 2006, we were moving forward  
10 with amendments to the Metal Mining Effluent Regulations  
11 that were based on the experience that we gained during  
12 the first three years of their implementation.

13 And the context of what we were attempting  
14 to do essentially, we were moving forward a total of 86  
15 proposed amendments. What flowed from that was an  
16 extremely interesting thing in that the discussion  
17 immediately focused on one proposed amendment, and that  
18 was the proposed addition of a new tailings impoundment  
19 area, which is equivalent to what we're discussing here,  
20 tailings impoundment area being the term that is used in  
21 the metal mining effluent regulations into a water  
22 frequented by fish. It became the issue.

23 And essentially what we heard is that  
24 stakeholders at large wanted to be engaged at a much  
25 earlier time, that they wanted to have an option whereby

1 they would have a greater understanding of what  
2 alternatives had been assessed in the context of coming to  
3 a conclusion that the utilisation of a water frequented by  
4 fish is the one that makes the most environmental sense.

5 We took that message very seriously. And  
6 in the context of our thinking, as we move forward, what  
7 came before us in early 2008 was a proposal which was very  
8 unique. It was for -- actually, it was for what we now  
9 refer to as the Meadowbank Mine in Nunavut.

10 And what was very interesting in that  
11 development was that the project proponent had undertaken  
12 an assessment that was based on a multi-accounts analysis  
13 that resulted in them looking at a whole range of possible  
14 alternatives in addition to the utilization of a water  
15 frequented by fish. This particular facility most notably  
16 was located north of sixty and the water body in question  
17 was smack dab in the middle of Iqaluit land.

18 As members may be aware, one of the  
19 fundamental things of concern to the people living north  
20 of sixty is caribou. Caribou migration is key.

21 And among other things, what they were  
22 saying is "Look, we want a very thorough assessment  
23 undertaken. We want to be certain that what is advanced  
24 is what makes the most environmental, technical and  
25 socioeconomic sense" -- with double underline under

1 'socioeconomic'. And they did acknowledge that economics  
2 have to be taken into account but fundamentally their  
3 primary interest was that what was being advanced is what  
4 made the most environmental sense.

5 Ultimately, what transpired is that we move  
6 through a consultation process. At the end of the day,  
7 all stakeholders acknowledged that this was a great way to  
8 approach this, this whole issue of what does make the most  
9 environmental sense. And what has to be borne in mind, in  
10 particular, is that when we are looking at what makes the  
11 most environmental sense, our colleagues in DFO most  
12 certainly focus on what is happening in the context of the  
13 water body in question.

14 But one also has to bear in mind that when  
15 they are looking at that, there are water bodies with  
16 fish, meaning a lot of fish, and there are water bodies  
17 with a few fish. And the relative value of the individual  
18 fisheries resource depends very much on what the nature of  
19 the fisheries resource is.

20 Also, what Environment Canada has to do is  
21 to consider the impact that would be borne by the  
22 environment if the disposal were to occur on land.

23 And in the context of what we're looking  
24 at, we must look at issues, in particular, north of sixty,  
25 we need to be considered about things and we are now

1 dealing with a very informed audience, a very informed  
2 group of stakeholders.

3 The Iqaluits said, "Look, we've got climate  
4 change going on. We are concerned about the long-term  
5 stability of permafrost. We now know, based on what  
6 regulatory people have told us, that you can no longer  
7 count on the long-term integrity of frozen containment  
8 structures. We also know that the relative value of the  
9 fisheries resource, while it is important, would be  
10 preserved in the context of the fact that the Metal Mining  
11 Effluent Regulations in part -- well, not just in part --  
12 partly what we did in terms of the 2006 amendments was to  
13 require that if there was ever a tailings impoundment area  
14 that was added to Schedule Two, that there could be no net  
15 loss of fisheries resources as a result of the project."

16 The Regulations also require that there be  
17 a fish habitat compensation plan developed that is  
18 approved by Fisheries and Oceans Canada complete with all  
19 the measures that will be undertaken to determine that the  
20 implementation of the plan has been successful, also  
21 backed up by the fact that the total cost associated with  
22 the implementation of the habitat compensation plan has to  
23 be paid upfront by the consultant.

24 And that bond is then secured. There is no  
25 way that a proponent can move away from the commitment to

1       implement the fish habitat compensation plan after the  
2       fact because the money is secured.

3               And when all was said and done, what  
4       happened as a result of this is we said this is what we  
5       want to see in the future.

6               From there, what we did is we went forward,  
7       we developed our own internal set of guidelines that laid  
8       out, based on what we had seen in the Meadowbank project,  
9       what our expectations were in the context of what we  
10      wanted proponents to demonstrate.

11              And the bottom line is, it was at that  
12      point that we started to tell them that "Don't bother  
13      coming forward to us unless you've undertaken an  
14      alternatives assessment that clearly demonstrates that the  
15      proposal that you have is the one that makes the most  
16      environmental sense".

17              Meanwhile, the response from stakeholders,  
18      including environmental non-government organizations, was  
19      well, fine, we like what you're doing, but we want to  
20      ensure that the same approach is taken with every single  
21      project coast to coast to coast.

22              We agreed with that. We subsequently  
23      awarded the contract to the consultant company that was  
24      responsible for developing the Meadowbank approach.

25              We asked them to take the basis of what we

1 had developed as a starting point, to take their  
2 knowledge, their technical knowledge, and to flesh out  
3 that knowledge in the context of specifying what should be  
4 done from a technical point of view to move forward, which  
5 included, incidentally, the identification of the things  
6 that needed to be considered from an environmental,  
7 technical, socioeconomic and economic perspective and also  
8 what had to be considered in the context of affording  
9 weights; in other words, those factors which would be  
10 considered in the context of evaluation of each of the  
11 alternatives.

12 That was given back to us. We ran their  
13 proposal by all technical experts within Environment  
14 Canada from a headquarters perspective, also in our --  
15 each of our five regions.

16 We then developed a front-end piece which  
17 is now called Section 1 of the document.

18 The document I'm referring to, by the way,  
19 is the one I have in front of me here. It's called  
20 "Guidelines for the Assessment of Alternatives for Mine  
21 Waste Disposal".

22 The front part of that explains what the  
23 document is about. It tells people what the regulatory  
24 process is going to be, and it is followed by Part 2,  
25 which lays out the technical parts of what we are

1 expecting from people.

2 We then reviewed this document with other  
3 departments, obviously Fisheries and Oceans Canada, but  
4 notably the CNSC, NRCan, Transport Canada and it was then  
5 called INAC, but the AANDC. And we got feedback from all  
6 of them in the context of what we had laid out.

7 We developed the final document with input  
8 taken into account. We provided the initial document in  
9 draft form to stakeholders in May of 2011.

10 We had the document out for a total of  
11 about three and a half, four months.

12 The overall reaction that we have had from  
13 stakeholders on the NGO side, finally, this is good. It  
14 lays out very clearly what it is that you're expecting and  
15 we now understand that you will not move forward without a  
16 thorough assessment of alternatives.

17 And the reaction that we've had  
18 collectively from industry has been, "Good. We like what  
19 we see. It's tough, but it's fair".

20 And so that has been our experience, and  
21 that's where we sit now.

22 Our expectation is that we did not  
23 retroactively apply this document, but we have asked  
24 people that are in the midst of an environmental  
25 assessment process to bear it in mind.

1                   This was done in the context of, most  
2                   recently, public meetings that were held relative to the  
3                   proposed addition of a couple of tailings impoundment  
4                   areas associated with the Detour mining project in  
5                   Ontario.

6                   Again, the overall reaction was pretty much  
7                   as had been characterized to us. And that meeting --  
8                   those meetings, by the way, took place in November, late  
9                   November.

10                  But essentially, NGOs are saying good, but  
11                  one thing that we're looking forward to seeing is that as  
12                  this moves forward, we are anxious to have stakeholders  
13                  engaged in a discussion up front of what the values are  
14                  and how they should be weighted in the context of the  
15                  overall evaluation, so ---

16                  **THE CHAIRMAN:** Look, thank you very much  
17                  for this. It's very useful. But we're not approving your  
18                  document here.

19                  What we would like to know is, are you  
20                  happy with the proposed regulatory and guidance document  
21                  as proposed by staff here?

22                  **MR. DOIRON:** Yes, I am. We are, and that  
23                  was reflected in the nature of the commentary that we  
24                  offered. Peggy Hallward (phonetic) represented our  
25                  interests in that context. And essentially what we said

1 is that this gives us now one very clear perspective that  
2 we can move forward.

3 **THE CHAIRMAN:** The nightmare scenario,  
4 there are not going to be any differences in the  
5 regulatory proposal of the two organizations, right? They  
6 will be entirely consistent with each other?

7 **DR. THOMPSON:** Patsy Thompson, for the  
8 record, and perhaps Mr. Doiron can add some details.

9 When the Commission directed staff in  
10 November 2009 to move forward with this proposal, if you  
11 recall, we first produced a discussion paper. And so in  
12 the weeks between your direction and the production of the  
13 discussion paper for public review, we met with Mr.  
14 Doiron's group to ensure that what we were moving forward  
15 was -- with was consistent with what they were moving  
16 forward with.

17 And the responses to comments and the final  
18 document reflect a harmonized approach. We're completely  
19 aligned. And the expectations for the uranium mining  
20 companies are the expectations for other mining companies,  
21 but also the proposals from uranium mining companies would  
22 also need approvals from the Department of Fisheries and  
23 Oceans and Environment Canada.

24 And the information collected to support  
25 the environmental assessment and our licence application

1 would meet Environment Canada's requirements.

2 **THE CHAIRMAN:** But I guess I'm looking at  
3 when is Environment Canada document will be formally  
4 approved and will it -- so is it necessary for the two  
5 documents?

6 **DR. THOMPSON:** Patsy Thompson, for the  
7 record.

8 My understanding, and Mr. Doiron can  
9 confirm, that their document is now a formal published  
10 document. The -- when we were developing our RD/GD, we  
11 had discussions with Environment Canada.

12 We had the option of essentially at  
13 Environment Canada's -- with their permission to take a  
14 lot of the information in their document and put it in  
15 ours, but with the state of advancement of their work it  
16 made more sense to reference it in our document, and which  
17 is what has been done now.

18 **THE CHAIRMAN:** So before I -- I think we're  
19 going to break off for lunch, but one last word for  
20 Environment Canada before lunch.

21 **MR. DOIRON:** All I'm going to do is confirm  
22 that the document was published by us in September. It is  
23 now on our website. It is now in all of our regions and  
24 has been in active use since publication, and it's just a  
25 reiteration of the fact that I think we have, between the

1 two organizations, a very consistent approach.

2 **THE CHAIRMAN:** Thank you.

3 I think it's a good time for us to break,  
4 and we will be back at 2 o'clock. Thank you.

5

6 --- Upon recessing at 1:03 p.m./

7 L'audience est suspendue à 13h03

8 --- Upon resuming at 2:13 p.m.

9 L'audience est reprise à 14h13

10

11 **THE CHAIRMAN:** Okay, before we continue --  
12 first of all, I'd like to apologize for being a bit late.

13 And just for the record, we've been  
14 informed that -- you'll remember there was this discussion  
15 about the database of accidents and when did it start.  
16 And we were told it started in the '50s. I think Mr.  
17 Webster in front of us said the database accumulation of  
18 those kind of events started in the '50s.

19 We are informed it was in 1962, just for  
20 the record. Okay?

21 Sometimes we do listen to our legal  
22 instructions.

23 Okay, thank you. We are back dealing with  
24 -- let me see the proper title here, with RD/GD-370, and  
25 Dr. McDill, you were in full flight, back to you -- early

1 flight.

2 **MEMBER McDILL:** I think Environment Canada  
3 was in full flight.

4 **(LAUGHTER/RIRES)**

5 **MEMBER McDILL:** I think part of my question  
6 -- my next question was answered by the representative for  
7 Environment Canada. But could staff tell me which  
8 responsible authorities were involved in this document?

9 **DR. THOMPSON:** Patsy Thompson, for the  
10 record.

11 You will recall, when we briefed the  
12 Commission on the plan to develop this document in  
13 November 2009, that it was recognizing that putting  
14 tailings in lakes was very much on the news and the CNSC  
15 had received a number of applications or had gotten visits  
16 from potential proponents for uranium mining projects in  
17 areas where there wasn't a lot of experience.

18 Nunavut was an example, but there were also  
19 Quebec, Labrador and new interest in some areas in  
20 Ontario. And at that time, we felt it was necessary to  
21 clarify the CNSC's expectation.

22 And so following the direction from the  
23 Commission at that time, CNSC staff started drafting a  
24 discussion paper and a technical support document and when  
25 we had enough of our thinking on paper, we met on various

1 occasions and exchanged information with Environment  
2 Canada and with the Department of Fisheries and Oceans.

3 And at that time, the Department of  
4 Fisheries and Oceans and Environment Canada clarified  
5 their role in administrating the *Fisheries Act* in relation  
6 to mining projects and tailing and waste rock management.

7 And so both DFO and -- Department of  
8 Fisheries and Oceans and Environment Canada were involved  
9 in providing advice to CNSC, but because Environment  
10 Canada has a lead role in terms of the *Fisheries Act* for  
11 the Metal Mining Effluent Regulations, the interaction  
12 with Environment Canada was a more continuous one after  
13 the initial.

14 But we made sure that the document that's  
15 in front of you captures the requirements that are in  
16 relation to the *Nuclear Safety and Control Act* and our  
17 regulations, as well as to requirements that  
18 proponents/applicants for uranium mine would need to meet  
19 under the *Fisheries Act* as well.

20 **MEMBER McDILL:** Thank you.

21 So for in terms of the other RAs that were  
22 mentioned by Environment Canada, we relied on Environment  
23 Canada for input from, say, Transport Canada, INAC, Health  
24 Canada, the other ones?

25 **DR. THOMPSON:** Patsy Thompson, for the

1 record.

2 In terms of the requirements for managing  
3 of uranium mine waste and tailings, and it's a similar  
4 situation for other mines, the key regulator, in our case,  
5 is the CNSC, and with a role from Environment Canada and  
6 DFO under the *Fisheries Act*.

7 But the example -- my understanding is the  
8 example that Mr. Doiron was speaking to was that when they  
9 initiated the development of their alternatives assessment  
10 guidance they consulted broadly, including with Indian and  
11 Northern Affairs at the time, because the projects under  
12 consideration were in the north.

13 **THE CHAIRMAN:** Can I jump -- did the  
14 Environment Canada document now get blessed by the  
15 provincial Ministry of the Environment, particularly in  
16 Saskatchewan, would be my interest? I'm sorry.

17 **DR. THOMPSON:** Patsy Thompson, for the  
18 record.

19 We could get back to you and confirm. Our  
20 understanding is that this document was developed for the  
21 purposes of the *Fisheries Act* and the Metal Mining  
22 Effluent Regulations and to meet the federal regulatory  
23 authority -- regulatory requirements.

24 I wouldn't be able to tell you to what  
25 extent the provincial authorities were consulted.

1                   **THE CHAIRMAN:** Dr. McDill?

2                   **MEMBER McDILL:** Thank you.

3                   I'd like you to get back on that one.

4                   We do have a cooperation agreement with  
5                   Saskatchewan in particular, so it should be.

6                   **MR. RINKER:** Mike Rinker, for the record.

7                   If I could add, Saskatchewan Environment  
8                   did comment on our document and their main comment wasn't  
9                   necessarily linking to Environment Canada; it was about  
10                  how they would define institutional control.

11                  **MEMBER McDILL:** And my next question for  
12                  this round is if the most appropriate scientific approach  
13                  is to release underwater but there isn't sufficient social  
14                  licence in the community, then what?

15                  **DR. THOMPSON:** Patsy Thompson, for the  
16                  record.

17                  I'll let Mr. Rinker talk about what  
18                  underwater means, and underwater is not necessarily in a  
19                  lake, so I'll ask him to provide...

20                  **MR. RINKER:** Mike Rinker, for the record.

21                  Examples in Saskatchewan are examples of  
22                  underwater waste management, in-pit disposal is  
23                  underwater. And whether they're on surface facilities  
24                  that are in some sort of basin that are using dams or  
25                  berms to -- for containment of water and so they're --

1 that has the same effect as in a natural environment.

2 **MEMBER McDILL:** Let me rephrase the  
3 question.

4 If it's in a fish bearing lake or water  
5 body and the best scientific approach is under -- is in  
6 that, then what with respect to social licence?

7 **MR. RINKER:** Mike Rinker, for the record.

8 That's the crucial point, and that's why  
9 Environment Canada has provided a very thorough type of  
10 guidance for alternatives analysis that requires, before  
11 the analysis is initiated, the proponent would engage the  
12 public to select weighting factors for things like cost,  
13 for things like environmental footprint and for things  
14 that the communities value -- public and Aboriginals would  
15 value -- and provide a scoring and then -- and that is  
16 done before the alternatives analysis is conducted.

17 It is then conducted based on -- after that  
18 consultation with the public based on that scoring, and  
19 preferred options are selected.

20 So it's -- the public and the Aboriginals  
21 are involved at the beginning to -- and then it's done in  
22 a fairly transparent way. There may -- you never -- I  
23 don't think you'll ever get 100 percent buy-in, but that  
24 sort of engagement is the way -- considered I guess best  
25 practice in how to resolve those differences.

1                   **MEMBER McDILL:** Thank you, Mr. Chair.

2                   **THE CHAIRMAN:** So just to pursue this, did  
3 I understand you saying that they were able to put in some  
4 guidance on weighing factor where you attribute certain  
5 weight to science and social kind of acceptability and you  
6 can have a trade-off, you know, so you can have actually  
7 numerical way of assessing one option against another  
8 option? Is it that detailed?

9                   **MR. RINKER:** Mike Rinker, for the record.  
10                   The guidance is specifically that. It's  
11 about how to do alternative analysis using recommended  
12 methods such as a multiple accounts analysis, and it's not  
13 -- it wasn't something created for Environment Canada's  
14 guidance document. It was what was -- has been  
15 demonstrated to be successfully used in other mine waste  
16 evaluations.

17                   And it is -- it provides an assignment of a  
18 numerical value to things like social values, economics,  
19 environmental effects, et cetera, and puts it all together  
20 as one analysis.

21                   **DR. THOMPSON:** Perhaps, Mr. Binder, to add  
22 a little bit more.

23                   These methods have been developed probably  
24 since the late '80s, early '90s in part in the States for  
25 the super fund sites where the public consulted on options

1 for remediating, in some cases, fairly severely  
2 contaminated sites. And so the methods were developed in  
3 that context and have evolved for a number of  
4 applications, but there's a lot of experience in using  
5 those methods in communities where projects such as  
6 environmental clean-up are quite contentious.

7 **THE CHAIRMAN:** So why wouldn't they use --  
8 if they're longstanding kind of approaches, why didn't the  
9 Province of British Columbia use it for their prosperity,  
10 for example?

11 Or they didn't use it at all?

12 **DR. THOMPSON:** Patsy Thompson.  
13 I'm not sure I can really respond to that  
14 question.

15 **THE CHAIRMAN:** I mean, I know I'm diverting  
16 but the Prosperity received such -- such a high  
17 visibility, I'm just wondering if they applied the  
18 Environment Canada rules as depicted?

19 And Prosperity would never have happened  
20 the way it did.

21 **DR. THOMPSON:** Patsy Thompson, for the  
22 record.

23 That's correct and, if you recall the time  
24 line, the Environment Canada Guidance Document was not yet  
25 officially published when the issues with Prosperity

1 happened.

2 And you're right, having gone through the  
3 process, I think would have avoided a lot of the issues.

4 **THE CHAIRMAN:** Okay. Thank you.

5 Monsieur Tolgyesi?

6 **MEMBER TOLGYESI:** Merci, monsieur le  
7 président.

8 A few years ago, there was a working group  
9 under the leadership of Canadian Dam Association of  
10 industry consultants, academia and they developed Tailing  
11 Disposal Guidelines more specifically for -- to tailing  
12 dams, in other words, tailing disposal.

13 Did you consult the document, what they  
14 were discussing and proposing there? Or guidelines what  
15 they were developing?

16 **MR. RINKER:** Mike Rinker, for the record.

17 I don't know the answer. Specifically, we  
18 did not consult the group but we do have a member on staff  
19 who is working on this document, Dr. Grant Su who is a  
20 member of the Canadian Dam Association.

21 So the knowledge gained from that group is  
22 -- was certainly -- members from that group regarding to  
23 writing of the document.

24 And in addition, I think, when -- the need  
25 for, I guess, to avoid institutional control is something

1 that is well-known and established through the waste  
2 management regulatory guidance and so we do tend to  
3 minimize the need for having infrastructure such as dams  
4 that require continual maintenance and inspection.

5 They're not always to be avoided but I  
6 think to avoid -- if they could be avoided that would be  
7 considered best practice.

8 **MEMBER TOLGYESI:** You know, my  
9 understanding is that -- when you're looking at  
10 "Implementation" at page 5, my understanding is that there  
11 is -- if it's no change in operations in the mine or mill,  
12 there is no need for licence amendment and, therefore, for  
13 compliance, actually.

14 You know, those mines who are operating,  
15 they will not necessarily have to comply with what these  
16 guidelines are saying.

17 **DR. THOMPSON:** Patsy Thompson, for the  
18 record.

19 The document essentially highlights that  
20 this is for new applications also recognizing that many of  
21 the existing Tailings Management facilities in Northern  
22 Saskatchewan would meet the intent of the regulatory  
23 document in terms of in-pit disposal.

24 But I will let perhaps the NCFR provide  
25 more information in terms of the existing facilities and

1           how they see this moving forward.

2                           **MR. LeCLAIR:**   Jean LeClair, Director of  
3           Uranium Mines and Mills Division.

4                           All the current tailings facilities in the  
5           operating mines are all above-ground tailings facilities  
6           or in-pit tailings so there are no tailings facilities of  
7           uranium mines and mills where tailings are placed in fish-  
8           bearing water bodies; so there is no issue.

9                           Clearly, the document is based on trying to  
10          do a proper options analysis from determining which method  
11          is the preferred method to use given that these facilities  
12          are already existing.

13                          The assessment would have to have been done  
14          25 years ago when they were built. We can't really do it  
15          now because, if anything, it's done what it's going to do.

16                          Similarly, on waste rock facilities, there  
17          are no facilities where we're currently placing waste rock  
18          into fish-bearing water bodies. So, again, there are no  
19          issues.

20                          Perhaps the more important thing is if  
21          there was intentions to build a new tailings facility or a  
22          new facility for the storage of waste rock, this  
23          particular document would apply as part of the  
24          application. They would probably need amendment to a  
25          licence in order permit the new tailings facility or the

1 new waste rock facility.

2 So, basically, the guide -- RDGD would  
3 apply in a new application. For the existing facilities  
4 they are already existing. So there's no -- there's no  
5 intent to apply it in that case.

6 **MEMBER TOLGYESI:** Because there was a  
7 second part of my questioning too, I was saying that, you  
8 know, the application for a licence renewal on here  
9 applies. The application will be presented, he should  
10 comply with these guidelines which means that this licence  
11 renewal will demand or trigger the process of the new  
12 regulation.

13 Does it mean that a mine which has an  
14 underwater tailing disposal facility -- if there are some  
15 -- will have to review his tailing disposal options and  
16 change his actual disposal practice even though the  
17 disposal facility is not filled to design capacity?

18 **DR. THOMPSON:** Patsy Thompson, for the  
19 record.

20 Perhaps to clarify, the intent of the  
21 document -- for existing facilities and, like for example,  
22 Key Lake or McClean Lake, the licence renewals for ongoing  
23 operations with no change, the CNSC has a compliance  
24 program in place where we collect information on the  
25 performance of those facilities.

1           The monitoring programs and there is a  
2 tailings program that has been in place, for example at  
3 McClean Lake, to ensure that the pit is behaving as we had  
4 predicted and actions can be taken if not.

5           So the intent isn't when licences are  
6 renewed to apply this guidance, our current compliance  
7 oversight would continue.

8           But if there is an application for another  
9 tailings management facility or a waste rock facility on  
10 an existing site then this guide would apply.

11           **MEMBER TOLGYESI:** On Slide 9, you're saying  
12 that CNSC's response was that "Staff agrees that, in  
13 certain circumstances, management of mine waste under  
14 water may be the best option but, in all case, natural  
15 water bodies frequented by fish should be avoided to the  
16 extent practicable."

17           What's that -- how do you qualify  
18 "practicable extent"?

19           **MR. RINKER:** Mike Rinker, for the record.

20           So, in general, we were responding to  
21 comments that, scientifically, it's valid that underwater  
22 disposal makes sense and, therefore, in a lake would be a  
23 good idea.

24           And we were, in part, refuting that science  
25 is correct "underwater is a good thing" but it's not

1 necessary to utilize a natural water body frequented by  
2 fish.

3 To say what is practicable, that is when --  
4 that would be based on an alternatives analysis that would  
5 demonstrate -- the licensee would demonstrate that, based  
6 on environmental protection reasons in protecting people,  
7 that it is the best option; socioeconomic factors taken  
8 into account.

9 **MEMBER TOLGYESI:** You were talking about  
10 conditions, circumstances. Could you give an example of  
11 the circumstances and who will decide, you know, "Do we do  
12 it or not?"

13 **DR. THOMPSON:** Patsy Thompson, for the  
14 record.

15 The whole purpose of RDGD 370, is to let  
16 the proponents and applicants know that the CNSC  
17 expectations is that fish-bearing waters should be avoided  
18 to the extent practicable and offer the requirement to use  
19 the alternatives assessment, the Environment Canada  
20 document, when a lake is being -- fish-bearing waters are  
21 being considered for disposal -- for waste management.

22 And, we recommend the use of this process  
23 to assess various alternatives for mine waste and tailings  
24 management.

25 So the documentation that the proponent or

1 the applicant would submit would consist -- the technical  
2 assessment of alternatives taking into consideration the  
3 various factors and it's through the CNSC staff and  
4 Environment Canada technical review of that document that  
5 we would bring recommendations to the Commission as to  
6 what is the appropriate waste management option.

7 **MEMBER TOLGYESI:** I will stop in this  
8 round.

9 **THE CHAIRMAN:** Okay. Thank you.  
10 Miss Velshi.

11 **MEMBER VELSHI:** Just a quick question: In  
12 a number of documents, instead of "into natural water" you  
13 have said "underwater" and highlighted that.

14 What's the nuance there?

15 **MR. RINKER:** Mike Rinker, for the record.  
16 Just to clarify the nuance between a  
17 natural water body frequented by fish and underwater in  
18 general, underwater can be achieved by avoiding natural  
19 water bodies. An open pit, for example, will fill up with  
20 groundwater and you can place your tailings or wastes in  
21 there and achieve even what's considered a pit lake. But  
22 it's not a natural water body. So there isn't biota or  
23 fish residents.

24 **THE CHAIRMAN:** Dr. Barriault?

25 **MEMBER BARRIAULT:** Thank you, Mr. Chairman.

1           I guess just a -- on your slide 11, you're  
2           dealing with all the waste rocks from mining industry, but  
3           there's no where in there that I see radioactive waste.

4           Now, is it implied that these wastes will  
5           be radioactive?

6           **MR. RINKER:** Mike Rinker, for the record.

7           I guess where we would see -- tailings  
8           certainly have a radioactive component to them, so the  
9           answer would be yes.

10          Waste rock is another question and there  
11          are different types of waste rock.

12          **MEMBER BARRIAULT:** I realize that, yes.

13          **MR. RINKER:** There is what we call  
14          problematic waste rock, and we define that as mineralized  
15          waste rock. In the definition of mineralized waste rock  
16          we've used terms like "deleterious to the environment",  
17          meaning that it would release things that could pose harm  
18          versus other -- versus other types of materials such over-  
19          burden and clean material that does not have levels of  
20          radioactivity that would be considered deleterious or  
21          radioactive.

22          **MEMBER BARRIAULT:** For my next question,  
23          regarding your tailing ponds, how do you protect the  
24          waterfowl really from contamination from radioactive  
25          substances?

1           I know you look at fish and you're saying,  
2           "Well we're not going to contaminate fish habitat with  
3           radioactive waste." But having said that, really, how do  
4           we protect the waterfowl from the tailing ponds?

5           **DR. THOMPSON:** Patsy Thompson, for the  
6           record.

7           The Commission has, on a number of  
8           occasions, reviewed, for example, tailings, impoundments  
9           or pits. And it's been the situation around Elliot Lake  
10          as well where we have, from time to time, had issues  
11          raised by members of the public or Aboriginal groups of  
12          waterfowl spending time on tailings, impoundments for  
13          example or pits.

14          And so the -- you know, the waterfowl who  
15          will reside for part of the year, for example, in the  
16          vicinity will become contaminated and to respond to public  
17          concerns, CNSC staff had done a fairly detailed assessment  
18          based on samples of waterfowl.

19          We had tissue analysis of radionuclides and  
20          did a dose assessment for members of the public who would  
21          be consuming contaminated waterfowl, and we had brought  
22          that information to the Commission. And the findings were  
23          that this would not pose a risk to members of the public.

24          **MEMBER BARRIAULT:** But, you know, looking  
25          at continuous improvement really we would minimize that, I

1 would imagine, into the future. So in this document,  
2 wouldn't you want to go in that direction of minimizing  
3 the risk to the public?

4 Somebody wants to answer that in the back;  
5 go ahead.

6 **MR. LECLAIR:** Jean Leclair.

7 Sorry, I just wanted to maybe touch on --  
8 it's a very valid point and a lot of the mining companies  
9 actually look at adopting various methods to control  
10 waterfowl.

11 So to touch on what Patsy was saying, we're  
12 in a situation where one of the sites, in fact, the  
13 testing of the waterfowl was shown to show fairly  
14 appreciable contamination.

15 Actions were taken to prevent the waterfowl  
16 from actually residing within the area. That can be the  
17 use of -- there's things like cannons that fire off loud  
18 sounds; there's different -- some noise generators, things  
19 that move. It could also be just a matter of, as they do  
20 their routine inspections, that someone is there to scare  
21 the waterfowl away, so that they don't -- they don't  
22 reside there. In other words, it's putting in some  
23 efforts to make it unattractive.

24 As far as I'm aware, I don't recall ever  
25 seeing waterfowl residing in any of the pits that are

1 currently being used.

2 I certainly am aware of situations where  
3 this has occurred, for instance, in aboveground tailings  
4 facilities, with dams, and in those situations there's  
5 different techniques that can be used to try to discourage  
6 waterfowl from residing in those areas.

7 **MEMBER BARRIAULT:** No, I realize that but  
8 wouldn't you want to put this in this -- sort of a  
9 document for the future? We're going to be looking at  
10 trying to eliminate this if we can and whatever.

11 **MR. RINKER:** Mike Rinker, for the record.

12 I guess there's two parts to this document  
13 that touch on that. And one of them is you need to  
14 minimize the risk to the environment in general. We're  
15 just not talking about the risk to fish.

16 And that things like relying on  
17 institutional control to be minimized, so dams, having  
18 large impoundments where you'd have to be actively trying  
19 to discourage them would be minimized.

20 And then you would pick your option that  
21 serves to best protect the environment in general, whether  
22 it be fish or, you know, the environment in total, also  
23 birds.

24 So there's the -- and so it has -- you  
25 know, a list of what we know are best practice, and the

1 first item on that list of what's -- is to utilize  
2 existing mine workings, pits, underground facilities if  
3 possible. That certainly would work.

4 You would decide whether you would want a  
5 pit lake to remain after the facility is closed or not; we  
6 have that option.

7 And I think the broader facilities that Mr.  
8 LeClair was discussing, you're talking about aboveground  
9 tailings facilities is kind of -- is perhaps vintage of  
10 Elliot Lake, which isn't necessarily the more modern  
11 practices that are happening in Saskatchewan.

12 **DR. THOMPSON:** Perhaps to add, Dr.  
13 Barriault, the alternatives assessment, when the criteria  
14 are being developed as to what will be considered during  
15 the assessment, certainly because of the interest of the  
16 public, because of the radioactive component, we would  
17 certainly expect that human health be one of the  
18 considerations in looking at the various options or  
19 alternatives for this -- for managing that waste.

20 **MEMBER BARRIAULT:** Before allowing it.

21 For my next question, Mr. Chairman, if I  
22 may, in the -- I guess in the future evaluation and  
23 granting of licence, will you have a requirement for  
24 ongoing financial guarantee for the permanent maintenance  
25 of these sites?

1                   I mean we saw Beaverlodge, we saw what  
2 happened there where people walk away and leave a mess  
3 really to clean up.

4                   **MR. ELDER:** Peter Elder, for the record.

5                   In terms of the -- all the existing mine  
6 sites actually already have financial guarantees in place.  
7 So actually, the whole financial guarantee regime for  
8 decommissioning started in the mining as lessons learned  
9 from what happened in the fifties and sixties when there  
10 were a lot of abandoned mines.

11                   So it's been in place for the mining sector  
12 -- uranium mining longer than anywhere else. So they all  
13 currently have financial guarantees in terms of  
14 decommissioning but that also includes long-term  
15 management of any tailings facility as well.

16                   **MEMBER BARRIAULT:** Thank you.

17                   Merci, monsieur le Président.

18                   **LE PRÉSIDENT:** Monsieur Harvey?

19                   **MEMBRE HARVEY:** Merci, monsieur le  
20 Président.

21                   Now on page 11 of your presentation in the  
22 CNSC response, you did try to clarify the consistency of  
23 different terms there, and you have a list here of the  
24 different mine waste, waste rock overburden, clean waste.

25                   Are all those elements subject to that

1 impounding? And the other part of my question is, in  
2 French we've got "Gestion des stériles et des résidus de  
3 concentration."

4 So it seems that there is only those two  
5 terms in French and all the other ones in English, so what  
6 is the correspondence between both?

7 **DR. THOMPSON:** Perhaps if I could address  
8 the title; la correspondance entre le français et  
9 l'anglais et puis je vais laisser monsieur Rinker parler  
10 au niveau technique.

11 Les stériles, c'est "waste rock" puis  
12 "résidus de concentration" c'est des "tailings." Ça fait  
13 que c'est ça la correspondance. Donc, le choix de la  
14 terminologie en français est approprié.

15 **MEMBRE HARVEY:** Mais pour les autres comme  
16 le "Waste rock overburden" c'est intégré dans les deux  
17 termes français?

18 **DR. THOMPSON:** C'est intégré dans les deux  
19 termes français puis si vous voyez dans la section  
20 "Définition", on définit aussi les différents types de  
21 stériles pour correspondre aussi avec la terminologie en  
22 anglais.

23 **MEMBRE HARVEY:** J'imagine que les stériles  
24 ou il y a certains types de matériaux comme "overburden"  
25 et ces choses-là, qui ne méritent pas d'aller dans des --

1 dans l'eau et il n'y a pas de nécessité de les couvrir ---

2 **DR. THOMPSON:** Je vais demander à monsieur  
3 Rinker de répondre à la question ou apparemment Jean  
4 LeClair va répondre à la question par rapport à la -- les  
5 catégories et le document met l'accent sur les déchets qui  
6 sont contaminés. Mais monsieur LeClair va parler des  
7 autres catégories.

8 **M. LECLAIR:** Oui, je pense que c'est  
9 important de faire une certaine distinction parce que si  
10 je donne un exemple, si je veux construire un quai puis  
11 j'ai besoin d'utiliser de la roche dans la construction du  
12 quai, qui se trouve dans un lac, à ce moment-là, le quai  
13 évidemment, il faut l'analyser, il faut faire des  
14 vérifications. Mais je ne pense pas qu'on va dire aux  
15 gens il ne faut pas construire un quai dans un lac où il y  
16 a des poissons.

17 Alors ce qu'on essaie de faire une  
18 distinction, c'est quand on parle des stériles et les  
19 résidus de concentration qui présentent un danger au point  
20 de vue de l'environnement aux poissons, je pense qu'on dit  
21 en anglais "deleterious substances," c'est ça le terme  
22 important qu'il faut prendre en considération parce que  
23 sinon, ce qu'on est en train de faire, c'est qu'on est en  
24 train de mettre des contrôles sur d'autres aspects. On  
25 veut encourager les mines d'utiliser le stérile qui est

1 propre dans la construction et de pas commencer à aller  
2 chercher d'autre matériel ailleurs.

3 C'est une bonne mesure de réduction des  
4 déchets. C'est la gestion des déchets pour minimiser les  
5 volumes de déchets.

6 Ça fait que c'est pour ça qu'on essaie de  
7 faire la distinction puis ça faisait partie des  
8 commentaires des titulaires qui disaient, "Y a des  
9 situations où vous voulez nous encourager qu'on utilise  
10 des matériels dans notre construction. On veut être  
11 capable de le faire."

12 Alors il faut absolument faire certain  
13 qu'il y a une distinction dans le document puis c'est pour  
14 ça que la distinction a été faite.

15 **MEMBRE HARVEY:** Une dernière question.  
16 C'est à propos de la prospection puis je ne sais pas à  
17 quelle page que c'était.

18 Je me demandais:

19 "Il convient de noter que les  
20 activités de prospection d'uranium  
21 d'exploitation en surface ne  
22 nécessitent pas l'obtention d'un  
23 permis auprès de la CCSN."

24 Je peux comprendre ça mais je me dis  
25 pourquoi? Est-ce qu'il y a un certain type d'exploration

1 de surface ou de prospection qui peut amener des déchets  
2 et d'une certaine quantité?

3 **DR. THOMPSON:** Je vais demander à monsieur  
4 LeClair de parler de la frontière entre ce qui est de  
5 juridiction provinciale et quand un permis de la  
6 Commission est nécessaire.

7 **M. LECLAIR:** Premièrement, ce qu'il faut  
8 dire c'est que dans l'exploration, toutes les agences  
9 provinciales, territoriales, il y a déjà des règlements en  
10 place pour l'exploration, que ce soit l'exploration pour  
11 l'uranium ou d'autres matériaux, d'autre minerai.

12 Alors il faut tirer une ligne parce que des  
13 activités d'exploration, il y en a un peu partout dans le  
14 pays. Il y a beaucoup d'exploration qui se fait.

15 On essaie de mettre une ligne en fonction  
16 des risques globaux. Alors ce qu'on fait dans  
17 l'exploration, on fait une distinction à dire lorsque les  
18 activités d'exploration commencent à toucher les activités  
19 minières où on a des mouvements de volume de roches de  
20 grandes quantités où le potentiel au point de vue  
21 radioactif devient plus important, à ce moment-là, on dit  
22 qu'on a besoin d'un permis avec la CCSN.

23 On prend comme exemple le projet Matoush où  
24 une décision a été prise que ce projet-là, même si c'est  
25 un projet d'exploration, c'est de l'exploration avancée.

1 Ils ont un développement d'une mine souterraine  
2 évidemment, pas tout à fait comme une mine à Rabbit Lake  
3 ou à McArthur où il y a de l'exploitation du minerai mais  
4 on commence à toucher des volumes assez importants de  
5 stériles. Il faut prendre en considération le traitement  
6 des eaux usées aussi et les systèmes de ventilation dans  
7 la mine souterraine -- il faut tenir compte de tous ces  
8 aspects-là.

9 Tandis que dans l'exploration, ce qu'on  
10 voit régulièrement c'est plutôt le forage qui se fait  
11 régulièrement. Alors à ce moment-là, les quantités sont  
12 quand même assez petites et on considère que les mesures  
13 qui sont déjà en place au niveau provincial, territorial  
14 sont suffisantes pour s'assurer de la protection.

15 **MEMBRE HARVEY:** Mais on prend, par exemple,  
16 le projet de Matoush; comment ça vient à votre -- comment  
17 vous vous en apercevez que ça devient le temps d'entrer  
18 dans le projet? Parce que si ça ne demande pas de permis,  
19 donc les gens ne viennent pas automatiquement vous voir.

20 **M. LECLAIR:** Dans l'uranium, ce qu'on  
21 retrouve, si je prends le projet Matoush par exemple, où  
22 on a une compagnie comme Strateco qui s'est impliquée, ce  
23 qu'on voit en général c'est que les compagnies quand elles  
24 commencent à étudier leur dossier un peu plus proche,  
25 elles vont commencer à communiquer avec leur collègue, les

1 gens de AREVA, Cameco où ils ont déjà beaucoup  
2 d'expérience et à ce moment-là, souvent c'est là qu'il y a  
3 un contact qui se fait.

4 L'autre chose qu'il faut mentionner c'est  
5 que notre division, on est capable de voir ce qui se fait  
6 un peu partout dans le pays. On est au courant des  
7 activités d'exploration d'uranium qui se font à travers  
8 tout le pays. Même on a des cartes dans nos bureaux où on  
9 peut voir où les activités d'exploration se font; quelles  
10 compagnies font l'exploration. Alors, on est toujours, si  
11 tu veux, un peu de l'avant à voir ce qui se passe.

12 En général, puisque l'exploration, ils ont  
13 toujours un besoin d'attirer des finances, ils l'annoncent  
14 très souvent quand un projet semble avoir de l'envergure,  
15 de l'importance. Ça fait qu'à ce moment-là, ça devient  
16 beaucoup plus évident puis c'est comme ça qu'on ---

17 **MEMBRE HARVEY:** Vous pouvez leur taper sur  
18 l'épaule puis leur dire, "Vous avez affaire à nous."

19 **M. LECLAIR:** C'est ça. Puis à ce moment-  
20 là, nous autres on -- souvent ils vont venir nous voir ou  
21 même on va aller les voir. Ils vont dire, "Je pense que  
22 vous avez un projet." On va commencer à en parler un  
23 petit peu plus.

24 **MEMBRE HARVEY:** Merci.

25 **THE CHAIRMAN:** Anybody else? Any other

1 question?

2 **MEMBRE TOLGYESI:** J'avais, monsieur le  
3 Président.

4 Dr. Thompson, ce que j'ai compris seulement  
5 donc -- sur un site en opération, c'est seulement s'il y a  
6 une nouvelle licence pour un nouvel entrepôt, un nouveau  
7 "tailing pond." C'est là que c'est une obligation de se  
8 conformer mais c'est pas quand il y a un renouvellement de  
9 licence?

10 **DR. THOMPSON:** Patsy Thompson.

11 C'est exact. Si c'est un renouvellement de  
12 permis sans modification du système de gestion des résidus  
13 qui est en place, le document n'est pas considéré. Si  
14 c'est un permis existant mais qui a une modification pour  
15 une nouvelle installation, même sur un site qui a déjà un  
16 permis par la Commission, à ce moment-là, ces exigences-là  
17 seraient demandées.

18 **MEMBRE TOLGYESI:** Vous parlez de  
19 "monitoring" -- you're talking about monitoring on page 4.  
20 There is no mention, no comments regarding the period of  
21 monitoring or criteria of monitoring?

22 **MR. RINKER:** Mike Rinker, for the record.

23 What the document does touch upon is that  
24 certain attributes that would be monitored need to be  
25 proposed by the proponent for evaluation and that those

1 aspects that are being monitored are monitored to  
2 demonstrate that the facility would be performing as  
3 predicted.

4 So that would really depend on the type of  
5 facility and what they're monitoring; if they're  
6 monitoring cover performance versus acid generation or  
7 what is the particular issue at the time.

8 **MEMBER TOLGYESI:** And the last one -- je  
9 reviens à cette définition de "stérile et résidu minéral"  
10 à la page 3. Parce que vous spécifiez,

11 "Stérile et résidu minéral doivent  
12 être gérés par le titulaire dans la  
13 façon à optimiser les ouvrages miniers  
14 et les barrières naturelles ou  
15 artificielles entre les déchets et  
16 l'environnement."

17 Est-ce que "les déchets", ça se rapporte à  
18 stériles et résidus minéralisés seulement ou il y a  
19 d'autres choses? Parce que dans le prochain "bullet",  
20 vous parlez des caractéristiques des stériles et des  
21 résidus minéraux.

22 Ça veut dire que -- I think it's the same  
23 in English. You're talking about -- you're talking about  
24 "waste rock and tailings." And the mention in bullet 2,  
25 you're talking about "waste material" which means waste

1 material is something which is larger than something else  
2 included in or not.

3 Because if it's not, why you don't call it  
4 the same name? The same in French.

5 **DR. THOMPSON:** En fait, ce qu'on voulait  
6 faire c'est de faire -- des résidus d'usine de  
7 concentration c'est des "tailings." Ce document-là  
8 s'applique au niveau des pratiques de gestion comme  
9 déchet.

10 Au niveau des stériles des mines, il y a  
11 une certaine quantité de matériaux de surface ou de roches  
12 qui -- ce que le document préconise c'est de minimiser le  
13 transfert de ce matériel-là puis de le considérer comme  
14 déchet.

15 Donc ce que le document préconise c'est  
16 d'utiliser ces matériaux-là le plus possible pour la  
17 construction des routes, par exemple, pour ne pas avoir à  
18 gérer ce matériel-là comme déchet. Mais il y a une  
19 certaine quantité de stériles ou de roches qui est  
20 minéralisée et qui peut contribuer à la contamination et  
21 c'est cette partie-là qui devient un déchet qui doit être  
22 géré comme un déchet.

23 Mais ce que je comprends de vos questions  
24 et des questions de monsieur Harvey c'est qu'on devrait --  
25 on va refaire une vérification de la version française du

1 document pour s'assurer d'une concordance complète.

2 **MEMBRE TOLGYESI:** Une définition de  
3 "déchet" peut-être.

4 **THE CHAIRMAN:** Okay. I just have one quick  
5 question on you. What is going to happen to P223 and  
6 P219? Those are the CNSC documents. Now, in view of this  
7 document and Environment Canada document, do they have to  
8 be revised, updated, what? Besides, you know that I don't  
9 recognize things that start with P.

10 **DR. THOMPSON:** I'll answer in terms of the  
11 content and perhaps Mr. Dallaire could speak in terms of  
12 the regulatory framework.

13 So in terms of the content of P229 -- or  
14 223, sorry, the policy on protection of the environment is  
15 general and speaks to alignment with national and federal  
16 policies, speaks to pollution prevention and general  
17 principles, so it does not need to be modified or amended  
18 because of this document.

19 But I will let Mr. Dallaire talk in terms  
20 of the -- the policy in terms of the regulatory framework.

21 **THE CHAIRMAN:** Just that every time we --  
22 every time we issue a new document, we should make sure  
23 that there's no need for consequential amendment to an old  
24 document that supposedly was used for the same space.

25 **MR. DALLAIRE:** Mark Dallaire, for the

1 record.

2 I certainly agree with that principle. To  
3 my knowledge, there are no conflicts between this document  
4 and the existing policies.

5 In the longer term, and we will have a bit  
6 of a briefing for you later this afternoon, our long-term  
7 objective is to consolidate a number of documents dealing  
8 with specific issues into single documents.

9 And the policy requirements that are in the  
10 two policy documents you've noted would be bundled into  
11 those rewritten documents.

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

13 Thank you very much. I think we've spent  
14 enough time on this, so good work here.

15 And we will move on to -- we're doing CMD  
16 12-M6 now?

17 **MR. LEBLANC:** Correct.

18 **THE CHAIRMAN:** Okay. So we're now on to  
19 Item 6 in the Agenda. It says update on Public  
20 Information Program, and this one is an update on the  
21 Public Information Program for devices containing radium  
22 luminous compounds as outlined in CMD 12-M6.

23 And I understand that people from AECL Low-  
24 Level Radioactive Waste Management office in Port Hope are  
25 joining us via teleconference.

1                   **MR. GARDINER:** Yes, we are here.

2                   For the record, Mark Gardiner, Manager of  
3                   Operations and Environmental Services and Michael Owen,  
4                   the Project Manager for the Historic Artefact Recovery  
5                   Program.

6                   **THE CHAIRMAN:** Well, thank you for joining  
7                   us.

8                   We'll start with the presentation by Dr.  
9                   Thompson.

10

11                   **6. Update on items from previous**

12                   **Commission proceedings**

13

14                   **6.1 Update on the Public**

15                   **Information Program for**

16                   **Devices Containing Radium**

17                   **Luminous Compounds**

18

19                   **12-M6**

20                   **Oral presentation by**

21                   **CNSC staff**

22

23                   **DR. THOMPSON:** Thank you, Mr. President,  
24                   and good afternoon, Members of the Commission.

25                   My name is Patsy Thompson; I'm the Director

1 General of the Directorate of Environmental and Radiation  
2 Program and Assessment.

3 With me today is Christina Dodkin,  
4 Radiation Protection Specialist with the Radiation  
5 Protection Division. And we have Ms. Jennifer Pyne and  
6 Mr. Sylvain Faille from the Transport Licensing and  
7 Strategic Support Division.

8 And as you mentioned, AECL staff are  
9 available.

10 CMD 12-M6 is being presented to the  
11 Commission to provide an update on the Public Information  
12 Program for devices containing radium luminous compounds.

13 Effective January 1, 2006, the Commission  
14 exempted indefinitely devices containing radium luminous  
15 compounds from the limitations specified under paragraph  
16 8(b) of the Nuclear Substances and Radiation Devices  
17 Regulations. Under this exemption, a person may possess  
18 or use an unlimited number of radium luminous devices  
19 without a licence, provided that radium is the only  
20 nuclear substance in the device and that the device is not  
21 disassembled or tampered with.

22 As part of their decision, the Commission  
23 requested that CNSC staff present periodic reports on any  
24 issues related to the licensing exemption, including with  
25 respect to the success of the Public Information Program

1 developed to support the licensing exemption.

2 Today is the CNSC staff's first report to  
3 the Commission in regard to the exemption.

4 I will now ask Ms. Dodkin to continue with  
5 the presentation.

6 **MS. DODKIN:** Good afternoon. My name is  
7 Christina Dodkin, and I'm a Radiation Protection  
8 Specialist with the Radiation Protection Division.

9 It is my pleasure to be speaking with you  
10 today about the CNSC's Public Information Program for  
11 devices containing radium luminous compounds.

12 Before introducing the program, I would  
13 like to provide some background information regarding  
14 devices containing radium luminous compounds.

15 I'll first provide an overview of the  
16 radioactive nuclear substance radium. Radium is a  
17 naturally occurring radioactive element, and it is a decay  
18 product of Uranium-238.

19 Radium was first discovered in 1898 by  
20 Marie and Pierre Curie, and pictured on this slide is  
21 Marie Curie.

22 Being radioactive, radium is unstable and  
23 emits energy in the form of radiation through the process  
24 of radioactive decay. Radioactive decay is best described  
25 using the term half-life, which is the time required for

1 half of a nuclear substance to decay. And radium has an  
2 extremely long half-life of 1,600 years, which means that  
3 radium will remain radioactive for many years.

4           Soon after radium was discovered, it was  
5 greatly exploited. One of the ways in which it was  
6 exploited included the discovery that mixing radium with  
7 phosphor resulted in a compound that self-luminesces, or  
8 glows in the dark.

9           This compound was developed into a paint  
10 and was used to paint military items and timepiece styles.  
11 In Canada, the use of radium luminous paint was  
12 widespread, beginning in the 1930s until the late 1960s.

13           We refer to a device which contains a  
14 radium luminous compound in paint as a radium luminous  
15 device or an RLD.

16           I will use this term "RLD" throughout the  
17 rest of the presentation.

18           Pictured on this slide is a Hamilton  
19 Whitney wristwatch. It was manufactured in 1936. The  
20 hands and numerals had been painted with radium luminous  
21 paint, so this watch is considered an RLD.

22           The majority of RLDs in Canada are historic  
23 artefacts associated with the military, such as aircraft  
24 and naval instruments, aircraft instruments being the most  
25 common.

1                   Aircraft RLDs may be found in operational  
2 aircraft or on display in museums. One study suggests  
3 that there may be tens of thousands of aircraft RLDs in  
4 Canada today.

5                   Pictured on this slide is an aircraft  
6 instrument with numbers and lettering painted with radium  
7 luminous paint.

8                   Because of their age, the majority of RLDs  
9 are generally not identified or marked as containing  
10 radioactive materials. Only a radiation detection  
11 instrument will confirm if a device contains radium  
12 luminous compounds.

13                  The phosphor mixed with radium deteriorates  
14 after several years, which causes RLDs to no longer glow  
15 in the dark.

16                  Radium and its decay products emits alpha,  
17 beta and gamma radiation. Alpha and beta radiation can  
18 have a very short range and will not pass through the  
19 skin. Internal exposures to these types of radiation  
20 result from radioactive material that has been taken into  
21 the body.

22                  This is a risk when RLDs are opened or  
23 damaged, since loose particles of radium luminous paint  
24 may be ingested or inhaled by a person.

25                  Gamma rays can penetrate the body, so gamma

1 emitters like radium can result in external exposures,  
2 even when the source is at a distance. Measurable  
3 exposures to gamma radiation may occur when many RLDs are  
4 grouped together.

5 Under the former *Atomic Energy Control Act*,  
6 licensing was not specifically required for RLDs. In  
7 2000, new requirements for RLDs were introduced under the  
8 *Nuclear Safety and Control Act* and Regulations.

9 It was recognized that the greatest  
10 radiological hazard from RLDs is when they are open, since  
11 this increases a risk of ingesting radium. Therefore,  
12 licensing and disassembling or repairing of RLDs or  
13 removing radium luminous paints from an RLD was introduced  
14 to ensure that this is performed by trained persons  
15 following safe work procedures. Controls over disposal of  
16 RLDs were introduced since RLDs are not permitted to enter  
17 into regular municipal waste streams.

18 RLDs must be transferred to a CNSC licensed  
19 radioactive waste management facility.

20 Licensing was also introduced for the  
21 possession and use of more than 10 RLDs which was based on  
22 an average number of RLDs found in aircraft instrument  
23 panels.

24 On the basis of a radiological risk  
25 assessment conducted by CNSC staff between 2001 and 2005,

1 the Commission granted an indefinite exemption effective  
2 January 1<sup>st</sup>, 2006. This exemption means a person may  
3 possess or use an unlimited number of RLDs without a  
4 licence as long as radium is the only nuclear substance in  
5 the device and the device is not disassembled or tampered  
6 with.

7 Beginning in 2001, the Commission granted  
8 an extended exemption to licensing the possession and use  
9 of more than 10 RLDs to allow CNSC staff to develop a  
10 risk-informed strategy for these activities. CNSC staff  
11 requested an exemption to licensing because the new  
12 requirements under the *Nuclear Safety and Control Act and*  
13 *Regulations* were difficult or unreasonable to enforce.

14 Since RLDs began being manufactured before  
15 nuclear regulation in Canada, many owners of these devices  
16 do not know that they contain radium. Many owners would  
17 also not meet qualification requirements for possession of  
18 nuclear substances.

19 A radiological risk assessment was  
20 conducted in order to allow for the risks associated with  
21 simple possession and use of RLDs to be assessed. The  
22 result of CNSC staff's assessment was presented to the  
23 Commission in December, 2005.

24 I would now like to provide an overview of  
25 the radiological risk assessment presented to the

1 Commission in 2005 upon which the current indefinite  
2 licensing exemption was granted.

3 Studies, inspections and stakeholder  
4 consultations were conducted since 2001 to gather  
5 information for the assessment on the scope and  
6 distribution of RLDs in the public domain along with  
7 associated radiation doses.

8 With this information, CNSC staff assessed  
9 the radiological risk associated with simple possession  
10 and use of intact RLDs to determine the likelihood of a  
11 person to receive a radiation dose above the regulatory  
12 public dose limit of 1 millisievert per year.

13 Stakeholder groups assessed were those with  
14 private collections of loose RLDs, aircraft maintenance  
15 crews, commercial and private aircraft operators, museums,  
16 Royal Canadian Legions and flight-training schools.

17 The result of CNSC staff's radiological  
18 risk assessment demonstrated that no member of the public  
19 was likely to exceed the annual regulatory public dose  
20 limit of 1 millisievert from the possession and use of  
21 intact RLDs.

22 It was also recognized that elevated levels  
23 of gamma radiation may develop when large collections of  
24 RLDs are grouped together. This may occur in two  
25 particular instances: commercial aircraft operations and

1 museums.

2 CNSC staff assessed these situations in  
3 more detail based on information gathered. In commercial  
4 aircraft operations, the highest estimated dose to an  
5 aircraft crew is, in conservative exposure scenarios, 0.47  
6 millisieverts or approximately 50 percent of the CNSC's  
7 annual public dose limit.

8 In museums, displays vary which results in  
9 varying radiation dose rates. The majority of museum  
10 displays have restricted access to the public. Based on  
11 conservative exposure scenarios, it was determined that a  
12 member of the public would have to spend approximately 500  
13 hours per year in close proximity to a museum display to  
14 reach the CNSC's public dose limit.

15 Typically, persons spend only a few minutes  
16 at a display, therefore, the probability of exceeding the  
17 CNSC's annual public dose limit is low.

18 The assessment also confirmed that the  
19 greatest radiological risks are when RLDs are open since  
20 this increases the risk for intakes of radium. This  
21 situation is addressed through licensing by the CNSC to  
22 ensure that these activities are conducted by trained  
23 personnel who follow proper handling procedures.

24 Now, I would like to provide the Commission  
25 with an update on the Public Information Program developed

1 to support the licensing exemption.

2 The program was designed with an emphasis  
3 on providing radiation safety-related guidance and advice  
4 on the safe handling and display of RLDs in the public  
5 domain.

6 Activities under the program have included  
7 the publication of a brochure which contains radiation  
8 safety-related information and advice on safe handling  
9 practices regarding RLDs. It also details where to get  
10 additional information on RLDs within the CNSC.

11 A dedicated CNSC radium e-mail account has  
12 been activated to handle specific inquiries regarding  
13 RLDs. Information regarding RLDs such as tips for  
14 identification of such devices and general safe handling  
15 practices has been published on the CNSC website.

16 Due to the numbers of RLDs in the public  
17 domain, they sometimes inadvertently end up in waste  
18 management or scrap metal recycling facilities where they  
19 set off vehicle radiation portal monitor alarms as they  
20 enter. Many waste recycling operators have installed  
21 these portal monitors to screen waste for radioactive  
22 materials before committing it to landfills or before  
23 compacting it for transport to landfills.

24 Although not developed directly for the  
25 program, the CNSC did publish a brochure and a poster to

1 assist waste management scrap metal facility workers'  
2 response to these alarms. The brochure and poster  
3 contains specific information on RLDs.

4           Following the launch of the Public  
5 Information Program and publication of supporting  
6 literature, CNSC staff initiated a mass e-mail and mailing  
7 campaign to close to 300 stakeholders to announce the  
8 program and introduce the associated materials. There  
9 have been information sessions conducted for CNSC staff to  
10 provide them with information about the licensing  
11 exemption and the program for RLDs.

12           As well, CNSC staff participated as part of  
13 a panel of health physics experts at the 2009 Smithsonian  
14 Air and Space Museum's conference. This session was  
15 conducted for aviation museum representatives and focussed  
16 on the proper handling and display of aircraft instruments  
17 containing radium luminous paint.

18           The CNSC's Directorate of Nuclear Substance  
19 Regulation has also published an article in their  
20 newsletter regarding RLDs as well as in the newsletter of  
21 the Canadian Association of the Recycling Industries.

22           Although modest, public interest has  
23 generally increased since the launch of the Public  
24 Information Program for RLDs. Requests from members of  
25 the public regarding RLDs continue to be received through

1 CNSC channels. These requests are typically for advice on  
2 identifying an RLD and options for their disposal.

3 Dedicated web pages on the CNSC website  
4 continue to be a valuable tool for disseminating  
5 information regarding RLDs.

6 CNSC staff conducted a recent review of the  
7 Public Information Program and opportunities for improving  
8 the program have been identified. For instance, the CNSC  
9 web content has been refreshed with some administrative  
10 changes.

11 It was also identified that more effective  
12 strategies were needed to engage members of the public on  
13 the information available from the CNSC on RLDs.

14 The broader audiences of the aviation  
15 community and museums have been targeted but there has  
16 been limited outreach to private militaria and antique  
17 collectors.

18 An updated outreach strategy has been  
19 developed to expand the education on RLDs to militaria  
20 collectors in particular. It is expected that outreach to  
21 this group will improve their general knowledge of RLDs  
22 and safe handling practices.

23 CNSC staff will target a few key military  
24 heritage tradeshow to provide printed information on RLDs  
25 as well as to offer services for the identification of

1 items containing radium luminous compounds.

2 Ads will also be run in relevant  
3 publications to drive target audiences to the information  
4 on the CNSC website.

5 I will now pass the presentation back to  
6 Dr. Thompson.

7 **DR. THOMPSON:** At this time, I'd like to  
8 provide an update to the Commission on issues related to  
9 the licence exemption.

10 Since the license exemption came into force  
11 in 2006, CSNS staff have not been made aware of any  
12 situation where there would be a potential for a member of  
13 the public to exceed the annual regulatory public dose  
14 limit related to the simple possession and use of RLDs.

15 The licence exemption does not pose an  
16 unreasonable risk to the environment or to members of the  
17 public.

18 On an annual basis, CNSC staff are aware of  
19 only five to six reports of RLDs triggering the alarms of  
20 radiation portal monitoring systems at waste management or  
21 scrap metal recycling facilities. AECL's low-level  
22 radioactive waste management office provides technical  
23 advice to stakeholders and members of the public on the  
24 identification and management of radium, including  
25 historic RLDs found on public and private properties

1 throughout Canada.

2 The low-level radioactive waste management  
3 office continues to accept, on a case-by-case basis, RLDs  
4 for transfer to a CNSC licensed waste management facility.  
5 The majority of this work is part of a cooperative program  
6 with the CNSC.

7 This brings us to the end of our update.

8 In conclusion, the implementation of the  
9 original public information program for RLDs has met the  
10 objectives of providing the public and stakeholders with  
11 assistance in identifying RLDs as well as providing  
12 general information on radiation safety awareness.

13 The program will be expanded and a new  
14 outreach strategy should result in reaching more  
15 individuals that are likely to own objects containing  
16 RLDs. As for the licence exemption, our assessment is  
17 that the radiological risk assessment upon which the  
18 exemption was granted remains valid.

19 Exemption of RLDs from the licensing  
20 requirement does not pose an unreasonable risk to the  
21 environment, the health and safety of persons or to  
22 national security.

23 CNSC staff will provide the Commission with  
24 updates on the progress of the public information program  
25 should the Commission be interested and at your request.

1 As well, we would bring to the Commission's attention any  
2 issues arising from the licence exemption.

3 This brings our presentation to an end, and  
4 we are available to answer your questions.

5 **THE CHAIRMAN:** Thank you.

6 Before opening up the floor for  
7 questioning, maybe I'll ask Mr. Gardiner whether you want  
8 to say anything about this.

9 Particularly, I don't get this case by case  
10 business. I thought anything we can send you, you will  
11 accept for disposal.

12 **MR. GARDINER:** Mark Gardiner, for the  
13 record.

14 The activities of the low level radioactive  
15 waste management office, we're a recipient of the  
16 information program that the CNSC is providing. We are  
17 recognizing that a lot of the contacts that we're gaining  
18 in the industry come from information programs provided by  
19 the CNSC as well as by those that we have interaction  
20 with, consulting firms that may be involved in doing  
21 radiation surveys, alarm trips and things like that at  
22 landfills and waste recycling facilities.

23 So I think that the activities that we  
24 provide in extending beyond simple radium luminous dial  
25 activities, we include things like static illuminator

1 bars. So we have a much longer list, but the inclusion of  
2 the work that we are involved with in this presentation is  
3 very well put.

4 **THE CHAIRMAN:** Sorry, but just so I  
5 understand, would you not accept certain RLDs?

6 **MR. GARDINER:** Mark Gardiner, for the  
7 record.

8 We accept all RLDs plus most historic  
9 artefacts, depending on the situation that they get to us.  
10 So absolutely all RLDs are recoverable by the low level  
11 radioactive waste management office's program.

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

13 Let me start the questioning. Monsieur  
14 Harvey?

15 **MEMBRE HARVEY:** Merci, monsieur le  
16 Président. Je voudrais d'abord féliciter le staff pour la  
17 présentation et les documents qu'ils nous ont soumis.  
18 C'était très intéressant et bien fait. Merci.

19 J'étais pour poser la question -- I wanted  
20 to ask the question about the number of facilities in  
21 Canada that could accept those equipment, those types of  
22 waste because you mentioned that AECL is -- can accept in  
23 some case by case, but -- and you have many demands during  
24 the year about the disposal of those devices.

25 **DR. THOMPSON:** I'll ask Ms. Dodkin to

1 provide a first level of response in terms of the number  
2 of licensed waste management facilities that can accept  
3 this. And then perhaps AECL could provide information in  
4 terms of the number of calls they get.

5 **MS. DODKIN:** Christina Dodkin, for the  
6 record.

7 I won't give you an actual number of  
8 licensed waste facilities that will accept. It all  
9 depends on the conditions of their CNSC licence. However,  
10 when we do receive requests from the public who are  
11 interested in disposing of RLDs safely, we do refer them  
12 to AECL's low level radioactive waste management office.

13 **THE CHAIRMAN:** AECL?

14 **MR. OWEN:** Michael Owen, for the record.

15 I would say, on average, we deal with  
16 approximately a dozen requests per year, and any one  
17 request could be for a single artefact or multiple  
18 artefacts up to a dozen, 300.

19 **THE CHAIRMAN:** Before -- is any of this RDL  
20 below conditional release; in other words, unconditional  
21 release, I guess, is what I was going to say.

22 Is any of this stuff can be thrown into any  
23 waste facilities?

24 **MS. DODKIN:** Christina Dodkin, for the  
25 record.

1           The way that the CNSC regulates radium  
2 luminous devices, we do so by defining them as a radiation  
3 device, and we do not regulate based on the amount of  
4 radium in the device since the amount of radium varies  
5 tremendously between each device. It all depends on how  
6 much radium was mixed with the phosphor and eventually  
7 ended up in the paint.

8           So as it stands, as per CNSC regulations,  
9 any RLD may not enter municipal waste streams, and they  
10 must be disposed of with a CNSC licensed radioactive waste  
11 management facility.

12           **THE CHAIRMAN:** Let me just absolutely  
13 understand.

14           So the little watch you showed us, what  
15 would be -- you put a Geiger counter against it, what  
16 would it be, typically, and how would a waste facility  
17 ever detect it if you throw it in the garbage?

18           **MS. DODKIN:** Christina Dodkin, for the  
19 record.

20           There was a study that was conducted under  
21 the former Atomic Energy Control Board, which did assess  
22 and obtained an estimated quantity of radium in watches,  
23 particularly. And based on today's regulated standards,  
24 timepieces typically do contain less than licensable  
25 quantities; however, because of how they are regulated

1 under the *Nuclear Safety and Control Act* and Regulations,  
2 those would be subject to the requirements to be disposed  
3 of as -- with a licensed waste management facility.

4 **THE CHAIRMAN:** Right. But isn't it funny,  
5 why didn't you recommend that we change the Regulations?

6 If they're below -- something doesn't  
7 compute here. If it's -- if they are below detectable  
8 level or almost below detectable level, and definitely  
9 below unconditional release, why didn't you suggest to  
10 change the policy or the Regulation?

11 **DR. THOMPSON:** Patsy Thompson, for the  
12 record.

13 It's something that we -- in preparing the  
14 information for the Commission, we've looked at why the  
15 Regulations were not revised or amended for these devices  
16 when they were updated a couple of years ago. And we  
17 don't have a clear answer to that, and so it's one of the  
18 homework we'll be doing in the next few weeks.

19 My understanding, it's the history of how  
20 these devices came into the public domain, and the variety  
21 of devices and the variation in terms of the quantity of  
22 material in each devices. But it's certainly something  
23 that we would need to reconsider, especially in the  
24 context that the Commission has granted an indeterminate  
25 exemption for those devices.

1                   But we're not quite sure why this wasn't  
2 done when the Regulations were last amended.

3                   **THE CHAIRMAN:** Mr. Jammal.

4                   **MR. JAMMAL:** For the record, Ramzi Jammal.

5                   A couple of things I'd like to clarify  
6 here. Is the radiation device as is; in its form  
7 untampered with? Safe. We want to capture the servicing  
8 of these devices, and that's the importance here, is; once  
9 you open up this device, you start to expose the worker to  
10 the radium inside those devices, let it be a single  
11 device.

12                   And as it was mentioned, in some of the  
13 devices -- as a matter of fact, we really do not know the  
14 activity. However, the exempt quantity under the CNSC is  
15 10 kilobecquerels for radium.

16                   So the intent here we're trying to capture  
17 the servicing of those devices, so once they are opened  
18 and that's when the hazard is for the individual who is  
19 working.

20                   And there were places before they were  
21 issued the service for licensing where there has been some  
22 contamination that they had to be cleaned up.

23                   So that's what we're trying to capture,  
24 we're trying to capture the servicing aspect of those  
25 devices, because you're correct, intact there is no risk,

1           it just becomes an issue once you open that device and  
2           then you start to do the servicing.

3                       **THE CHAIRMAN:** Even on a watch, if you  
4           break the watch there is possibility of enough  
5           contamination to worry about?

6                       **MR. JAMMAL:** Ramzi Jammal, for the record.  
7                       Is breaking one watch? The answer is:  
8           bluntly, no, it isn't. However, the radium workers back  
9           then who were exposed for quite an extensive amount of  
10          radium developed secondary effects from radium such as  
11          cancer and so on and so forth.

12                      So we're trying -- I mean, instead of doing  
13          it by case-by-case basis we're trying to cover the whole  
14          aspect because the intent here is the servicing aspect and  
15          the proper disposal. So the low-level waste office is  
16          taking charge of the disposal, but if it goes in the  
17          waste, and you're correct, intact; there should be no  
18          impact.

19                      **THE CHAIRMAN:** Monsieur Harvey?

20                      **MEMBER HARVEY:** Just one last question.  
21          Was that -- there is no more such devices, they stopped  
22          the production and that will, in the future, end somewhere  
23          in the future, so this is a story that will just end in  
24          maybe in 10, 20, 30 years ---

25                      **THE CHAIRMAN:** Sixteen hundred (1,600)

1 years.

2 **MEMBER HARVEY:** Well, I mean, most of the  
3 volume will go somewhere.

4 **THE CHAIRMAN:** Not if they're in museums  
5 and they're in ---

6 **MEMBER HARVEY:** No, no, no, in a museum  
7 they will keep it for years.

8 **THE CHAIRMAN:** Probably Dr. Barriault has  
9 some of these little old things in his basement.

10 (LAUGHTER/RIRES)

11 **THE CHAIRMAN:** Okay, Dr. Barriault, it's up  
12 to you.

13 **MEMBER BARRIAULT:** Thank you, Mr. Chairman.

14 Yes, I -- well, I did have a five gallon  
15 bucket full of these things historically, but the reason  
16 for it is because as you went for maintenance of your  
17 aircraft instruments they could not maintain them so  
18 therefore you had to switch systems.

19 Historically you had a venturi vacuum  
20 system that operates out of these instruments on  
21 directional gyros; you had to go to electrical vacuum  
22 pumps to operate the new ones and then you were at the  
23 mercy, of course, of the marketplace with the new ones  
24 being in demand and the old ones being useless.

25 So to make a long story short really, I

1 gave a bunch of them to ---

2 **THE CHAIRMAN:** Just for the record, Dr.  
3 Barriault is a pilot, just so everybody understands what  
4 he's talking about.

5 **DR. THOMPSON:** So I assume those devices  
6 have made their way to the low-level radioactive waste  
7 management facility.

8 **MEMBER BARRIAULT:** Probably.

9 I certainly appreciate what you've done and  
10 I think it's nice to see things being removed rather than  
11 added to the regulatory list, so kudos for that.

12 A publication that's put out by the  
13 Canadian Department of Transport to all pilots in Canada  
14 is a newsletter that comes out to all people who hold a  
15 pilot's licence and you can circulate your information  
16 there.

17 You can also do it through the scrapyards  
18 of aircraft. There's Global Aviation in Edmonton,  
19 Alberta, there's a variety of them across Canada and  
20 they're the ones who will be on the receiving ends of a  
21 lot of these things.

22 And so just to clarify where we're going  
23 with this really, because most aircraft maintenance shops  
24 do clear these things like the plague really, they have  
25 nothing to do with them.

1                   Anyway, that's why I went with the five  
2                   gallon bucket otherwise I wouldn't have.  Incidentally, a  
3                   five gallon bucket is just one aircraft, that's all.  If  
4                   you have two or three aircrafts you have three five --  
5                   anyway, thank you, Mr. Chairman.

6                   **THE CHAIRMAN:**  Thank you.

7                   Ms. Velshi?

8                   **MEMBER VELSHI:**  Do you have any sense of --  
9                   you know, you've mentioned that tens of thousands of these  
10                  devices out there, what fraction of the owners do you  
11                  think you're reaching or have reached?

12                  **MS. DODKIN:**  Christina Dodkin, for the  
13                  record.

14                  I can't give an actual number of how many  
15                  owners we believe we've reached.  However, I am confident  
16                  that we have reached out to every stakeholder group which  
17                  was identified, now that we've expanded the outreach to  
18                  include the military collectors.  We've covered the broad  
19                  stakeholders of the aviation community, as well as  
20                  museums, and now we're reaching out to the private  
21                  military collectors.

22                  So once we've done that then we have  
23                  reached out to everyone that we've identified and it will  
24                  just be a matter of maintaining the program after that.

25                  **MEMBER VELSHI:**  But what about watch

1 owners?

2 **MS. DODKIN:** Christina Dodkin, for the  
3 record.

4 The difficulty with reaching out to members  
5 of the public who might have timepieces is because they  
6 were so extensive in Canada we don't even know the numbers  
7 of timepieces that were in Canada.

8 At one point it was estimated that in the  
9 1950s and 1960s radium luminous painted timepiece may be  
10 found in every home in Canada. So over time they would  
11 have been discarded as they malfunctioned, et cetera.

12 So outreach to that particular set of  
13 stakeholders is very -- it's been a challenge and we're  
14 hoping to reach them through information on the website,  
15 and perhaps when we do reach out to these antique  
16 collectors.

17 **DR. THOMPSON:** If I could -- Patsy  
18 Thompson, for the record.

19 When the staff came to the Commission in  
20 2006 for the exemption, the public information program was  
21 developed on a risk basis targeting the groups that were  
22 likely to have the largest collections and providing  
23 radiation safety information.

24 At this stage, the next effort will be for  
25 people who have an interest in collecting -- individuals

1 with an interest in collecting for their own -- because of  
2 their own interest, and so that would be the next  
3 stakeholder group which we think would benefit from the  
4 public information program.

5 As was mentioned earlier, there is  
6 information on our website, and we did a survey in  
7 preparation for the Commission meeting, and between July  
8 1, 2010 and September 25<sup>th</sup>, 2011 -- so about a year --  
9 there were 1,205 visits to the CNSC web pages on radium  
10 luminous devices.

11 So we think we are reaching individuals  
12 with an interest or questions on these devices through our  
13 web pages as well, but the formal public information  
14 program outreach to groups was focused on groups that had  
15 the higher -- the highest risk.

16 **MEMBER VELSHI:** And, you know, recognizing  
17 a lot of these folks won't even know that they have got  
18 something that's got radium in there. If they were to  
19 unknowingly open it and maintain it, and I know that the  
20 amount would vary a lot, but is there kind of an upper  
21 boundary of what kind of dose they could get from handling  
22 this?

23 **DR. THOMPSON:** Patsy Thompson, for the  
24 record.

25 As you have just mentioned, it's really a

1 case-by-case depending on the size of the timepiece or the  
2 device and the amount of radium.

3 My understanding is when the risk  
4 assessments were conducted the -- because servicing and  
5 disassembling required a licence the focussed risk  
6 assessments were on other handlers or users of timepieces  
7 that were intact essentially.

8 So I'm not sure that we could provide a  
9 good answer to your question.

10 **MEMBER VELSHI:** I guess what I'm hearing  
11 you say is we really haven't been able to quantify that  
12 risk or even get a sense of what that risk is, other than  
13 it's lower than the group that you're addressing right  
14 now?

15 **DR. THOMPSON:** Patsy Thompson.

16 That's correct.

17 **THE CHAIRMAN:** Let me try a different  
18 approach. So how many of those watches end up in AECL?

19 AECL, do you want to tell us?

20 **MR. OWEN:** We've never -- Michael Owen, for  
21 the record.

22 We've never fielded a request to recover a  
23 watch.

24 **THE CHAIRMAN:** So they're going to the  
25 dump, let's agree with that.

1                   And now in some of those sophisticated  
2                   dumps there is monitoring devices. What's a trigger for  
3                   those monitoring devices; anybody knows? In the waste  
4                   facilities when we alarm them, what's the level that will  
5                   trigger it?

6                   I mean, they'll trigger now in -- if you  
7                   take it through the border and you had a CT scan or  
8                   something like this you will ---

9                   **MR. OWEN:** Michael Owen, for the record.

10                  In general terms, one RLD would trigger a  
11                  portal monitor, but there are different manufacturer's  
12                  monitors that have different thresholds, so it's difficult  
13                  to answer that question.

14                  **THE CHAIRMAN:** I know, but the border one  
15                  are now so sensitive that if you have a medical procedure  
16                  you'll -- you know, you'll alarm -- the alarm goes off.

17                  I'm just wondering -- I'm assuming that a  
18                  lot of them find themselves in the waste facility, which  
19                  means, to me, that they're below the threshold.

20                  **DR. THOMPSON:** Patsy Thompson, for the  
21                  record.

22                  In terms of sort of watches or small  
23                  timepieces, the fact that, you know, AECL has not been  
24                  called to recover them probably leads to the right  
25                  conclusion that they're being disposed of with domestic

1 waste.

2 But I think the issue, in terms of a risk,  
3 is not that an intact watch will be put in the garbage and  
4 will end up somewhere in a landfill; I think the issue is  
5 more if people were to open and play around with the watch  
6 where there may be some contamination because of handling  
7 and this but we haven't really -- we don't have the  
8 information right now to say what a dose to an individual  
9 handling that material would be.

10 **MEMBER BARRIAULT:** If I can help clarify a  
11 little bit. These dials are variable sizes, I mean, you  
12 can have a pocket watch that's one centimetre or you can  
13 have one that's 1.5 or 2 centimetre's diameter, you can  
14 have an instrument that's 12-14 centimetre's diameter. So  
15 the amount of radiation and radium is different depending  
16 on the size of the instrument that you have. Just a  
17 matter of clarification.

18 **THE CHAIRMAN:** But I think those  
19 instruments normally are in some collectibles.

20 **MEMBER BARRIAULT:** Oh, they are.

21 **THE CHAIRMAN:** So you probably have a  
22 better handle on seeing them, rather than a private watch.

23 **MR. RÉGIMBALD:** André Régimbald, for the  
24 record.

25 There are about 30 or so portal alarms

1 reported to the CNSC every year and from the report we've  
2 received so far not one of them involved a watch.

3 And the portal alarms are set at extremely  
4 low-level, almost at background. So like you said, anyone  
5 with a -- like have a medical procedure would trigger the  
6 alarm or sometimes a naturally occurring radioactive  
7 material in bricks or bananas or -- you know, things like  
8 that would trigger the alarm. So they are set at very  
9 low-levels.

10 And not all the municipalities in Canada  
11 have those portal alarms but those that have them report,  
12 you know, their alarms to us. And as I said, previously  
13 we used to have like hundreds of them in from the City of  
14 Toronto but they were due to the short-lived radioisotope  
15 resulting from the medical procedures. So they have -- we  
16 have arranged a procedure for them that they can just park  
17 the load aside for a few days until the load decays and  
18 then they run it through again and it's okay.

19 So just to add a bit of information on  
20 this.

21 **DR. THOMPSON:** Perhaps also to reemphasise  
22 that the timepieces -- the watches -- have a quantity of  
23 radium below an exemption quantity, so below a licensable  
24 quantity.

25 **THE CHAIRMAN:** Monsieur Jammal?

1                   **MR. JAMMAL:** For the record, Ramzi Jammal.

2                   I don't have anything to add except from a  
3 security perspective even patients trigger alarms as  
4 reported in the literature, where individuals wearing the  
5 watch triggered the security alarms and they removed the  
6 watch and went on.

7                   So the point, is the Commission asking a  
8 question with respect to the public? So there are  
9 indicators in place that are telling us they are  
10 triggering the alarms but the device itself is contained  
11 and it's not open as such.

12                   And to answer your question. Yes, correct,  
13 it will trigger an alarm if it's in the proper position  
14 the alarm will detect it. And again, from security at the  
15 airports they are detecting such devices and then the  
16 individual will carry on with it.

17                   **THE CHAIRMAN:** It just seems to me that  
18 we're not really -- should not really be concerned with  
19 those time watch even though the policy dictate that we  
20 must be concerned with everything. That's what I think  
21 there may be some time to review our regulatory policy  
22 here.

23                   Ms. Velshi, we interrupted you.

24                   **MEMBER VELSHI:** No, that's fine. Thank you

25                   **THE CHAIRMAN:** Okay. Mr. Tolgyesi, pas de

1 questions.

2 Dr. McDill?

3 **MEMBER McDILL:** Thank you.

4 Maybe it's a little bit off topic but  
5 remind me, this -- a lot of this came out of the -- there  
6 was a hangar in Toronto that had these devices present, is  
7 that not correct. And what was the end result of that  
8 particular site and how did it fall into this?

9 **DR. THOMPSON:** Patsy Thompson.

10 If you could, maybe the low-level  
11 radioactive waste management office could better answer  
12 that question.

13 **MR. OWEN:** Michael Owen, for the record.

14 The low-level office was involved in the  
15 remediation of that site, the characterization and  
16 assessment of RDLs and followed up with the owner who  
17 contracted an external consultant to conduct the  
18 remediation and the materials were collected and packaged  
19 and sent to our licensed facility at Chalk River.

20 **MEMBER McDILL:** So there is an established  
21 -- I guess -- protocol now for such things?

22 **MR. OWEN:** Yes.

23 **MEMBER McDILL:** Thank you.

24 **MR. OWEN:** Excuse me.

25 **MEMBER McDILL:** Thank you, Mr. Chair.

1                   **THE CHAIRMAN:** Anybody else, anything else?  
2                   Just a couple of questions; the brochures  
3 are really nice, kind of -- brochures, are they online  
4 also, the actual brochures?

5                   **MS. DODKIN:** Christina Dodkin, for the  
6 record.

7                   Yes, they're available online.

8                   **THE CHAIRMAN:** And how many hits do you get  
9 or questions you get on the specific -- the radium  
10 website?

11                   **MS. DODKIN:** Through various CNSC channels  
12 we're averaging about one phone call or email per month.

13                   **THE CHAIRMAN:** So would that be a good  
14 thing to put on our Facebook? This is going to be one of  
15 my standard questions practically on everything now.

16                   If you want to reach some of their people,  
17 you know they're tough to reach. I'm not sure you want  
18 everybody to send you their old watch but they may -- you  
19 may want to put this on a Facebook and give some of that  
20 background.

21                   **DR. THOMPSON:** Patsy Thompson, for the  
22 record.

23                   As I mentioned earlier, there's about 1,200  
24 people -- or webpages viewed on the CNSC website dealing  
25 with radium luminous devices but certainly putting the

1 information on Facebook might help us reach another  
2 audience.

3 **THE CHAIRMAN:** And just with respect to  
4 when are you going to actually review this policy and  
5 regulatory? For example, the 10, I don't know who picked  
6 up 10 on what basis because you didn't put in dosage that  
7 goes with it. So I don't know whether -- why is it not  
8 nine or why is it not 11, but is the 10 now become  
9 meaningless here because we exempted everything?

10 **MS. DODKIN:** Christina Dodkin, for the  
11 record.

12 The number 10 was introduced to trigger  
13 licensing for possession and use. It was based on a study  
14 that was conducted under the Atomic Energy Control Board  
15 and it's actually an average number of radium luminous  
16 devices that you could find in an instrument panel of  
17 older aircraft.

18 So that's what led CNSC's staff review into  
19 that number to perform the radiological risk assessment to  
20 ensure that we're regulating these, you know, using a  
21 risk-based approach.

22 **THE CHAIRMAN:** But if you get 10 together  
23 what kind of dosage will you get, would that still be  
24 severe?

25 **MS. DODKIN:** Christina Dodkin, for the

1 record.

2 That's also one of -- one of the problems  
3 with the number 10, since as I mentioned the amount of  
4 radium in these devices varies extremely from one device  
5 to another. It all depends on how they were manufactured,  
6 how much paint was used, how much radium was mixed in with  
7 the paint, et cetera.

8 So it doesn't give a true estimation of the  
9 risks. The only actual risk is to do an actual radiation  
10 dose estimate which we've done through our radiological  
11 risk assessment.

12 **THE CHAIRMAN:** So if I understand your  
13 conclusion, which I assume they're more like  
14 recommendations with the status quo, because you are  
15 recommending that you'll come back to us in five years, is  
16 that not what's being recommended here?

17 **DR. THOMPSON:** Patsy Thompson, for the  
18 record.

19 What we've essentially -- the  
20 recommendation was that the current risk assessment -- the  
21 information we have indicates that the risk assessment on  
22 which the Commission exempted possession of these devices  
23 is still valid.

24 In the discussion earlier we need to do  
25 internal consultation on whether or not the regulations

1           need to be revised on the basis that the indeterminate  
2           exemption and we will certainly come back to the  
3           Commission with information if that would be useful for  
4           the Commission.

5                       Our next step in terms of moving forward is  
6           to change the audience for our outreach program, to go  
7           from museums and aviation groups to private collectors.

8                       **THE CHAIRMAN:** But since this is of a  
9           diminishing kind of a risk, you know, you want to do a  
10          quick review and not waste a lot of resources on something  
11          with so slowly as diminishing returns.

12                      **DR. THOMPSON:** Patsy Thompson, for the  
13          record.

14                      That's correct, that's why the outreach now  
15          targets collectors who are likely to possess a number of  
16          devices, are not targeting individuals who may have a  
17          watch or a timepiece.

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

19                      Anything else?

20                      Thank you very much.

21                      So this concludes the public meeting of the  
22          Commission. Thank you all for your attendance and  
23          participation and we will take what -- five minutes.

24                      **MR. LEBLANC:** We'll take five minutes and  
25          then we'll go in camera.

1                   **THE CHAIRMAN:** Okay, five minutes then we  
2 go in camera in this room. So anybody who doesn't belong,  
3 see you later.

4 --- Upon adjourning public meeting at 3:45 p.m.

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