

**Canadian Nuclear
Safety Commission**

**Commission canadienne de
sûreté nucléaire**

Public meeting

Réunion publique

May 28th, 2018

Le 28 mai 2018

TownePlace Suites Marriott,
Highland Conference Room,
19 Millenium Way,
Kincardine, Ontario

TownePlace Suites Marriott
salle de conférence Highland
19, Millenium Way
Kincardine (Ontario)

Commission Members present

Commissaires présents

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

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

Secretary:

Secrétaire:

Mr. Marc Leblanc

M. Marc Leblanc

General Counsel:

Avocate générale :

Ms Lisa Thiele

M^e Lisa Thiele

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Kincardine, Ontario / Kincardine (Ontario)

--- Upon commencing on Monday, May 28, 2018 at 6:01 p.m. /

La réunion débute le lundi 28 mai 2018 à 18 h 01

Opening Remarks

M. LEBLANC : Bonsoir, Mesdames et Messieurs. Good evening, ladies and gentlemen. Welcome to the public meeting of the Canadian Nuclear Safety Commission.

My name is Marc Leblanc and I am the Commission Secretary.

We have simultaneous interpretation this evening and for the duration of the proceeding. Please keep the pace of speech relatively slow so that the interpreters have a chance to keep up.

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

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

Please keep the pace of your speech relatively slow so that the interpreters have a chance to

keep up.

La transcription sera disponible sur le site de la Commission in about two weeks. So we should have the transcripts available on our website in about two weeks.

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

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

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

President Binder...?

LE PRÉSIDENT : Merci, Marc.

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

Welcome also to those joining us via webcast and teleconference.

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

I would like to begin by recognizing that we are holding this Commission Meeting in Indigenous

Traditional Territory.

I would like to introduce the Members of the Commission that are with us here today.

On my right -- let me see, they confused me here -- are Dr. Sandor Demeter and Ms Kathy Penney; and on my left are Ms Rumina Velshi, Mr. Timothy Berube and Monsieur Marcel Lacroix.

I'm sorry about this kind of hesitation here, they changed the whole seating arrangement.

--- Laughter / Rires

THE PRESIDENT: We already heard from our Commission Secretary Marc Leblanc, and we also have with us here on the podium Ms Lisa Thiele, Senior General Counsel to the Commission.

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

The meeting agenda was published on May 17, 2018.

This will be a short meeting, with one item on the agenda, to provide to the Members an update on the status of power reactors in Canada. This update is provided at every Commission proceeding and we anticipate starting -- we will take a 5-minute break after the end of the meeting and then start the hearing thereafter.

Mr. President...?

CMD 18-M23

Adoption of Agenda

THE PRESIDENT: So with this information, I would now like to call for the adoption of the agenda by the Commission Members, as outlined in CMD 18-M23.

Do we have concurrence?

So for the record, the agenda is adopted.

CMD 18-M24

**Approval of the Minutes of Commission Meeting
held on March 15, 2018**

THE PRESIDENT: I would like now to call for the approval of the Minutes of the Commission meeting held on March 15, 2018.

Any comments, additions, observations, deletions?

Seeing none, so we have concurrence.

So for the record, the minutes are approved.

CMD 18-M25

**Approval of the Minutes of Commission Meeting
held on April 4, 2018**

THE PRESIDENT: Next, I would like to call for the approval of the Minutes of the Commission meeting held on April 4, 2018.

Again, any comments?

Seeing none, the minutes are approved.

So let's now proceed with the Status Report on Power Reactors, which is under Commission Member Document CMD 18-M26.

We have representatives from OPG, Darlington and let's test the system here. I think they are online.

Darlington, can you hear us?

MR. KHANSAHEB: We can hear you, President Binder.

THE PRESIDENT: Thank you.

We have also a representative from Lepreau.

MR. VULANOVIC: Yes, Point Lepreau.

THE PRESIDENT: Thank you.

I understand, Mr. Frappier, you will make the presentation. Over to you.

CMD 18-M26

Status Report on Power Reactors

Submission from CNSC Staff

MR. FRAPPIER: Thank you and good evening, Mr. President and Members of the Commission.

For the record, my name is Gerry Frappier and I am the Director General of the Directorate of Power Reactor Regulation.

With me today via teleconference are Power Reactor Regulatory Program Division Directors plus technical support who are available to respond to questions on the Status Report on Power Reactors as presented in CMD 18-M26.

This document was finalized on May the 22nd, so I have the following verbal updates.

On May 24th, Pickering Unit 8 Power was reduced to 93 percent due to fuelling unavailability. I note that there is no impact to safety on that, but they are currently at 93 percent.

As of this morning, Point Lepreau is at 0.1 percent of full power as it is transitioning to full power as part of its return to service following completion of the planned maintenance outage.

New Brunswick Power has also submitted an event report as per REGDOC-3.1.1 that I would like to bring to your attention, although we will come back later with more information. The event is of regulatory interest because it involved alpha contamination. This event involved the worker exposed to low level alpha contamination, well below the level of regulatory actions.

To provide a general description, the worker was performing planned maintenance work on a steam generator. Alpha hazards were anticipated and protective equipment were appropriate for the hazard. As the worker was exiting the steam generator, his protective hood caught on the side of the access way and came off. The worker was immediately removed from the field and monitored for external and internal contamination as per station procedures. These in fact did identify that an intake of radioactive contamination had occurred. New Brunswick Power performed calculations to ascertain the worker's exposure based on the results of whole body counting and workplace smears. The initial calculation of the worker's total exposure for this incident was 57 microsieverts, which is well below the regulatory action level of 2000 microsieverts.

From a regulatory compliance perspective, potential health hazards were anticipated, appropriate

protective measures were implemented, and monitoring in response to potential exposures was followed as per station procedures. However, the CNSC is looking into this and will review the event report more fully and report back to the Commission when more information is available.

This concludes the Status Report on Power Reactors' update and the CNSC staff are available for any questions you may have.

THE PRESIDENT: Thank you.

So let's start the question session with Dr. Demeter.

MEMBER DEMETER: Thank you.

I have a question for Point Lepreau. With the recent flooding in your province, were there any impacts or manoeuvres that you had to exercise for the nuclear power plant?

MR. POWER: For the record, this is Mark Power, the Station Director at Point Lepreau.

The recent flooding that occurred did not have any direct impact on the plant operation, although some of our staff were delayed in their ability to get back and forth to work, but it did not have any direct operation on the station.

MEMBER DEMETER: I'm sorry, just to follow up on that then. Were you able to retain your critical

complement during the period, for staffing?

MR. POWER: For the record, Mark Power.

We had no problems maintaining our regular complement.

MEMBER DEMETER: Thank you.

THE PRESIDENT: Ms Penney...?

MEMBER PENNEY: A question for Bruce about the primary heat transport pump seal. Is there any update on that and the root cause analysis?

MR. SAUNDERS: Yes. Frank Saunders, for the record, from Bruce Power.

We have reached the point where we are satisfied that we understand the failure mechanism and how it occurred, both for Unit 4 and the previous Unit 3, they were of a similar nature. It had to do with the tertiary seal, which is the third seal in the line or the most outer one, with a carbon bushing that sits in that seal and this is in fact where the failure started on both of these two pumps and then resulted in damaging the other seals. The issue came down to tolerances around the space between the bushing and the shaft. At Bruce A, if everything was machined to the minimum tolerances possible, the space would only be 12,000ths of an inch. On Bruce B this would be 60,000ths of an inch. So we understand the mechanism, we understand the fix. We are still following up on a few

failure mechanisms as part of the root cause for completeness to make sure that there is no other impacts that might be possible, but we are in the process of actually repairing the pumps now and preparing the technical evaluation that will justify a return to service.

THE PRESIDENT: Is it strictly at Bruce Power or is it also other NPPs that may use similar kind of pumps?

MR. SAUNDERS: Frank Saunders, for the record.

All the NPPs use similar arrangements on the pump but not exactly the same, so we are certainly sharing that information with all the other utilities so they can be aware of it, but they won't be exactly the same design as the pumps we have here. In this case Bruce A and Bruce B were slightly different and we are adapting the same design now for both pumps so they will both be the same so there can be very -- what would appear to be very minor changes sometimes which can in the right circumstance create an issue.

THE PRESIDENT: So staff, are you going to finalize the root cause report? How is that going to work from here on?

MR. SIGOUIN: Luc Sigouin, for the record.
So Bruce Power has taken this issue very

seriously and staff are satisfied with the urgency and the follow-up that Bruce Power has put in place. We have stayed in touch with Bruce Power on a regular basis. They have been providing biweekly updates to us on the progress of the root cause investigation, so we are satisfied with the process that they have taken. We have recently observed their closeout meeting in preparation of finalizing the root cause and we can come back to the Commission with our review of the final root cause investigation and provide you a status update at that time. But for now we are satisfied with the progress that they have taken and the approach that they seem to be adopting to correct the situation.

THE PRESIDENT: Thank you.

Dr. Lacroix...?

MEMBER LACROIX: Yes, thank you. I would like to hear a little bit more about the maintenance of these seals.

MR. SAUNDERS: Frank Saunders, for the record.

I'm not sure I get your question exactly. The seals while they are operating of course don't really have much maintenance. We do monitor a number of things, vibration, water temperatures and so forth, leakages by the seals, and we have greatly enhanced that as part of this

experience, so a lot more instrumentation now in the control room and in the engineering facility than there used to be. Typically when you are offline we don't maintain the seals unless there is an indication of there's a problem or the outage extends beyond 60 days, where we have noted that, you know, other things in the seals tend to cause failures down the road. So there is a very prescribed maintenance program of course, but the pumps are designed really to operate between one seal overhaul and another without actually requiring any maintenance, because taking them apart, as you can imagine, is a fair amount of work. You have to lift the big motor off and take the seals out. So they intend it to run from -- you know, over a normal operating life without being maintained directly.

THE PRESIDENT: Mr. Berube...?

MEMBER BERUBE: Thank you very much for that, by the way. That makes me feel comfortable that we are close to having a root cause analysis done and finalized on this. Of course what flows out of that is we have a bunch of pumps that are in service and they have the same problems. What is the intended, you know, replacement at this point, or redesign necessary to do that?

MR. SAUNDERS: Frank Saunders, for the record.

Yes, the Bruce B pumps are fine. So it's

the Bruce A pumps, so there's Units 1 and 2 and 3. We are setting up an expedited schedule to replace those. We are just out securing the parts and the materials to do that and we have committed to staff that we will give them the schedule as soon as we have all the information we need to make it happen.

THE PRESIDENT: Ms Velshi...?

MEMBER VELSHI: Thank you.

A question for Darlington on your moderator heat exchanger work and the wetting incident. Can you share some more details on what the uptake was and what the potential could have been?

MR. KHANSAHEB: Yes. This is Zar Khansaheb, for the record, reporting for Darlington.

Our current estimates at this point for the individual is 1.2 rem, equivalent to approximately 12 mSv. The individual was performing an operation that involved vacuuming out moderator heat exchanger tubes. What occurred there was as he was performing this operation he was in the appropriate personal protective equipment with double plastics. However, water was -- D20 was running down his arm, which resulted in water entering the area between the double plastics and the single protection. So right now as he goes through his standard biological lifecycle through tritium, that is the current estimate we

have of 1.2 rem or 12 mSv.

MEMBER VELSHI: And what is the tritium concentration in the moderator in Unit 3?

MR. KHANSAHEB: Tritium concentration is approximately 11 Ci per kilogram.

MEMBER VELSHI: Thank you.

THE PRESIDENT: Back to Dr. Demeter.

MEMBER DEMETER: I'm good, thank you.

THE PRESIDENT: Ms Penney...? Questions?

MEMBER VELSHI: Just a quick question for Bruce Power. When you reduced your Iodine-131 levels, the allowable levels, from to what is the new limit?

MR. SAUNDERS: I will just ask Mr. Newman whether he knows that value. We dropped it in line with what the safety analysis folks told us, but I don't remember the number I'm afraid. We will get that number for you.

THE PRESIDENT: Anything else? Questions?

Any further information? Okay. So this closes the meeting and we will take a break. Come at 6:30 as promised, okay.

--- Whereupon the meeting concluded at 6:18 p.m. /

La réunion se termine à 18 h 18