

MR. FRAPPIER: Yes.

THE PRESIDENT: Why doesn't the same logic apply to that class?

MR. FRAPPIER: Because I don't think they have to report on all those documents.

MS TADROS: Haidy Tadros for the record.

So I think part of what Mr. Frappier was alluding to is we have site staff available, so the mechanism by which information is exchanged with the CNSC is a little bit different than for example the class of facilities and licensees that we are looking at here where they actually have to now pick up the phone and call the duty officer in that case. There isn't a CNSC person in front of them on a regular basis that the information is relayed to. So that's one aspect I think and the difference between the two sets of facilities.

So why not the five days, I think was your question, sir, and why is that not specifically stipulated?

Because with regard to different examples and events that we already are reviewing, it is important for us to provide a consistent approach across all of the facilities under the fuel cycle. So we are talking about not only the Chalk River site, we are talking about the SLOWPOKES, we are talking about Denison Mines, we are

talking about uranium mines and mills.

We are talking about a large complexity and a broad level of risk categories across the fuel cycle and in order to provide further consistency and consolidate reporting across those facilities it's easier to say when in doubt report to us and have a baseline that way and then we can then go forward for what specific event has happened and we can determine what the appropriate actions are.

THE PRESIDENT: Go ahead.

MR. LeCLAIR: Jean LeClair for the record.

Just to further add to what Ms Tadros just mentioned, the key difference between power reactors and a lot of the facilities in DNCFR, we have to remember the complexity of the facility. The volume of incidents that would be associated with a nuclear power plant just because of the complexity of the facility -- I believe Mr. Frappier was touching on that -- wouldn't apply to the facilities that we regulate in DNCFR, so the volume, the complexity of it. So in the case of DPRR, clearly they have approached this by developing a methodology for doing risk ranking in order to be able to manage the volume. So I would actually say that in power reactors there is a lot more than what we would see across the DNCFR facilities that we are dealing with simply because the complexity of the facilities that

we are dealing with in DNCFR are not the same.

So these are the fundamental differences for licensees and DNCFR: they are not dealing with the same quantities, the simplicity in reporting. And as we mentioned before, the fact that we do not have people present on most of these sites that can look at things on a very regular basis and be continuously informed, we need some mechanisms by which people can tell us what's going on on their sites on a regular basis, but the volumes are definitely not in the same sort of range.

THE PRESIDENT: I don't think a volume is a good excuse for that. Look, you have to be really, really clear, because if you look at it from my perspective and I look at risk-informed, they are a lot more risky than your class and therefore I would expect them to be immediate reporting against. So if there is a provision that allows you the five days, then you will have to explain why immediate doesn't apply in this case. It's not that I'm arguing with them, I'm arguing with you, I'm arguing with NPP. I don't understand because of this comment why there is a scenario where the NPP don't have to reply to us immediately. So that is -- it's not explained here but it took me by surprise. That's all I'm trying to say.

MR. FRAPPIER: Gerry Frappier for the record.

But it is in our 3.1.1 document that has been approved for a little while. But again, it comes down to it's not just volume in a sense, it's a question of level of depth with which people are expected to report things. And so we have a lot of reports, and some have been brought to your attention and we talk about them sometimes in the annual report, where we are getting information because we want to be doing trending of different things. So we are collecting that information. Some of it requires a bit of time for the licensee to put it together and it's not deemed of safety significance, therefore --

THE PRESIDENT: Normally we don't call them events. I recall just recently somebody fell in a parking lot and they broke their legs and we knew about it instantly. So what I don't understand is where is the area where there are events -- because we are talking about events here that you could take five days to report. Look, I don't think we are going to resolve it because my answer was change the NPP requirement, everybody is immediate, not -- so then we really truly have uniformity across, rather than relax that one to fit the NPP. So you will

have to explain that a lot better to me on the NPP side.

MR. FRAPPIER: So we can certainly come back and explain it a lot clearer than I am here. We are certainly not suggesting that the document that's before you right now needs to be changed. They have their reasons, they have -- and we have as the CNSC a good understanding of why there would be a difference, we are just having a hard time explaining it to you right now.

THE PRESIDENT: No, OPG in fact was the author of this. I don't know, you aren't in that class, why did you ask for that change is again sort of a mystery to me.

MEMBER DEMETER: Can I just add just for clarification. What would really help me, because I don't have 3.1.1 in front of me, is actually a side-by-side comparison of Appendix A equivalent in 3.1.1 and this appendix and if there are differences between the reporting and notification and timing between the two a justification. Because I agree, I think it's good to be consistent across the classes and if you are going to make provisions for differences -- right now because I don't have the other one in front of me I can't really make a decision whether this is appropriate or not based on that it may be significantly different than the other regulatory

document which is notification for a higher risk category of facility. So it's quite uncomfortable to try to figure out if this is appropriate considering it needs to be reflected on 3.1.1 for my satisfaction.

MS MURTHY: Kavita Murthy for the record.

Dr. Demeter, Appendix A of this document, every single provision that is specified in here has as its source a regulation or a provision in the Act with the time period written in the Regulations. That's what we are referring to.

I think above and beyond that there are other requirements for reporting, which is the ensemble of the requirements that are contained in this document. So there are significant occurrences which may not fit the definition given in the Regulations of what a reportable event is and I think that's where the discussion is on immediate versus 21 days. This is these requirements about how -- the time period within which something has to be reported, these are all coming from specific requirements and Regulations.

THE PRESIDENT: But that means also that those other requirements, none of them apply to your side, it only applies to NPPs.

MS MURTHY: Kavita Murthy for the record.

No, that is not necessarily true. There might be significant occurrences or there might be reports that we require, such as quarterly reports and/or compliance reports, that would not be a stipulated timeframe in the Regulations but that would be specified in the Licence Condition Handbook as a report that we require the licensee --

THE PRESIDENT: No, but it's still there. They're described as risk inform, a delay for five days. Anyhow, I don't think we are going to resolve it here. I have no problem about your REGDOC. I now have a problem with REGDOC-3.1.1 and that's where I really would like some clarity, why all the requirement for 3.1.1 will not be the same immediate reporting. So that's me and, you know, I may have to do a sidebar on that.

I have definitely occupied too much time here. So who was next on my list? Where did I start. Who started here? Mr. Seeley was. So we are now into Dr. Demeter. Sorry about that.

MEMBER DEMETER: My question. At page 4 of your CMD under 1.2, Highlights, the third bullet of the second set of bullets, and just for my comfort it says:

"any failure to monitor or control
the release of a hazardous substance

as required by any federal or provincial regulation, or a licence, permit or certificate issued by a municipal, provincial or other federal authority"

So there is a lot of jurisdictions that might have a whole set of different bars and I just wanted assurances that at some point there is going to be a consistent bar across Canada, irrespective of the territorial, municipal, provincial or federal authority that is not CNSC, they can set the bar higher, that's fine, there are going to be some inconsistencies, but that the bar will always be consistent so that one licensee will not have a lower bar than another based on a base level. That's just --I wanted to get some sense of how that plays out.

MS TADROS: Haidy Tadros for the record.

So this particular specific provision that is highlighted here is already at a high level found in section 29 of the *General Nuclear Safety and Control Regulations* with regards to reporting to the CNSC when it comes to releases to the environment, so we have provided very specific information here.

Perhaps I will ask Ms Kavita Murthy to

give you a specific example. You may recall the Port Hope Area Initiative when there was releases that had occurred, we came before the Commission and there at that point there was different jurisdictions involved and what the licensee needed to do to fulfil on reporting requirements across the jurisdictions.

MS MURTHY: Kavita Murthy for the record.

So with regards to release of hazardous substances that are non-radiological, there are reporting requirements that tie into, for instance, in Ontario with the Ontario Ministry of Environment and Climate Change. There is a Spills Action Centre to which a report must be sent immediately. What this is saying is that we have reporting requirements that pertain to jurisdictions that are provincial. Those reports shall also be made to the CNSC, that we shall also be informed of those events and incidents immediately or at the time period that is specified in those Regulations. I think that is what we were getting at here.

MEMBER DEMETER: Yes. I was just trying to see if there's some consistency of application so that different licensees don't have significantly different reporting requirements for the same substance that's been released, given how multijurisdictional things sometimes

get differences of limits.

MS TADROS: Haidy Tadros for the record. So in terms of amounts you mean, in terms of the actual quanta of what is released?

MEMBER DEMETER: I guess in terms of the trigger that would result in a report. It may be different between different jurisdictions and I'm trying to figure out if there is a way of harmonizing that, or if it's not an issue, then it's not an issue. Saskatchewan probably has all their sets for the mining industry and Ontario may have different sets. I just want to see, how much of a disparity is there across the country in these triggers and does that lead to a heterogeneous group or are we pretty homogeneous?

MS TADROS: Thank you for that clarification. Haidy Tadros for the record. I will ask Mr. Mike Rinker to speak to it because I think you saw some of this in our Regulatory Oversight Reports yesterday.

MR. RINKER: Mike Rinker for the record. In fact there are some small differences in reporting requirements because they are set by -- each province has their own set of reporting requirements. What we have tried to do is harmonize as best we can with those provincial requirements, including as an example setting

release limits. The release limit in Ontario for hydrazine is marginally different than the release limit for hydrazine in New Brunswick, but they are both protective. So if we create something that is more consistent across the industry without taking into account the province, we have the risk of setting up two different requirements and we found because it's protective to harmonize with the province that is there, then there is one requirement for that facility, the provincial and federal requirement.

MEMBER DEMETER: Okay. Thank you very much.

THE PRESIDENT: Dr. McEwan...?

MEMBER MCEWAN: I have two very, very small. I guess the word "immediate" to me has a very specific connotation, it means immediately, and yet, Ms Tadros, I heard you say that that might actually mean 48 or 72 hours for some licensees for some events. So we don't really mean immediately in the generally understood context of the word immediately.

MS TADROS: Haidy Tadros for the record.

You are correct, sir. I think this is a part without a clear definition in the Regulations and that is what we took, is that the word "immediately" in the Regulations and as identified on our page 5, both within

the Regulations and in the *Packaging and Transport of Nuclear Substance Regulations*, "immediate" really means when the licensee becomes aware that it's a reportable event and in certain situations immediately means that after the licensee has taken steps to mitigate the consequences.

So the challenge, and I think it goes back to what Commissioner Seeley was saying, is to be prescriptive to the point where we identify every single specific event that potentially might happen and to try to formulate that in this regulatory document, it would have been an exhaustive list because there are a lot of things that can potentially happen. So we had to create or design a bar where immediately is indicated as what we would expect licensees to let -- this is all about us, the CNSC knowing what has happened. So immediately would constitute an area of flexibility for the licensee dependent on what the event was.

MEMBER MCEWAN: But that could change in interpretation from inspector to inspector.

MS TADROS: Haidy Tadros for the record.

I don't believe so. I believe our current operating experience has shown that through the different facility and assessment compliance teams the professional

judgment of the inspector is shared across colleagues and is shared across different types of events and shared across different types of facilities. So I believe that there isn't right now an area of concern where one inspector says you should have reported this within two hours and another inspector says you should have reported this within one day.

I think the regulatory document, the requirement number 8, identifies that a licensee should notify and report to the CNSC duty officer immediately allows us that consistency so that there isn't a judgment call on the part of the licensees to let us know when something has happened. Thereby, it never really comes into play when it comes to the inspectors because we would have already known about it through the duty officer.

MEMBER MCEWAN: Okay. And my second -- again, it actually relates to judgment call. In number 4 of the elements, serious illness, injury and death, I, if I was a licensee, would find your guidance unhelpful. For example, the way I read this, if a member of staff had a heart attack in the control room of NRU it would be reportable, but if it was in an office it might not be. So the serious injury one seems -- is a cancer reportable or not reportable? So it seems to me you need more thought

around the guidance for the serious injury piece. Just a question.

MS TADROS: Haidy Tadros for the record.

I believe you were referring to the Appendix on page 14, the Guidance there with regards to illness and injuries --

MEMBER MCEWAN: The first paragraph of the Guidance section.

MR. MANLEY: I don't know if this would be helpful, but again maybe I could try. It's Robin Manley for the record.

So we have now several years of experience with REGDOC-3.1.1 and in fact this has been one of the most complicated questions that comes up, is when an injury occurs on the site or a person faints, collapses, heart attack or what have you, where is it reportable and where is it not. So I would say we have some years of practice with that reporting to the CNSC staff, either the duty officer or the site staff, and I'm not sure if someone from CNSC can help me out here, but we have over time developed kind of an interpretation document that the NPP facilities working through COG periodically have meetings with CNSC to go through, okay, what does the exact reporting criteria mean. A little bit of speculation here is that some of the

words in this new REGDOC are informed by some of that experience where they have, I think, attempted to add some additional clarity beyond what existed in 3.1.1 with the learnings from that experience.

THE PRESIDENT: Let me try to argue, just for argument's sake, the contrary. If you try to codify behaviour of human beings forever and ever and ever, (a) it will be so lengthy nobody will know what it means. So I actually would rely on your common sense.

The only thing we were looking -- and this is where I was looking for a public interest at large concept. So it's not the fact that somebody, I don't know, broke their leg on your parking lot that's of interest, it's all of a sudden a whole series of ambulances are going to your site and the public is worried what's going on. So to me that would be kind of reportable not because of safety, it's because of the public interest.

And I hope you don't try to put a checklist with all those situations because that will drive everybody nuts. But I think you have to have some -- you know, like I was looking, we never defined the notion of an event, you know, what is an event. We tried to put a long list of tables here and tried to capture everything, but I'm with you that common sense -- we read now the

definition of EIR in front of us for many, many years, so I have no problem with that.

It's just the dilemma was always on public interest for the NPP. Anything you do is of public interest, particularly if it leaks outside the gate, and therefore we have to find a way to be able to report it. And the reporting should not be very onerous, it's just keeping our duty officers and our inspectors informed and from then on we can work together to try to find out what to do with this. So that would be -- sorry for my outburst here. But again, I was looking for where's the provision for public interest.

MR. LeCLAIR: So, Mr. President, actually I like your statements with regards to common sense because I would like to share with you a few real examples where common sense dictated how things were dealt with. I will use mine examples just because they are the ones that are coming to mind for me right now.

It occurs sometimes at the mine because they have an actual medical clinic at the mine site. If someone offsite of the mine has a heart attack and you are at a remote mine, the mining company will provide service to that person even though they are not meant to be a hospital, but they will try to deal with that person and if

the person dies what will happen is they will tell us that they dealt with somebody from offsite who came in and he died while they were trying to save him. So we know about it, we understand it was a fatality, but it's really not related to the licensed activities.

Similarly, if something happens on their time off when they are back at camp and something happens, well, they will tell us that something happened, but we won't view it as a reportable event simply because it's not tied to the nuclear activities.

And that's always a challenge, right, is you can't predict all the different kinds of events that can occur, but certainly one thing we do do, and the licensees are actually very good at it, they will give us a heads-up immediately whenever they have -- because obviously serious injuries and fatalities are things that most people are going to get interested in one way or the other.

Similarly, Mr. President, I think all the licensees are quite aware now, and we certainly have been reinforcing that a lot, exactly your example. You know, if the ambulance is coming up on the site, if they are calling in a possibility that the firefighters from the city are going to have to be called in but it turns out to be a

false alarm, they are still going to tell us about it simply because we know that that might draw public interest.

So these things, they are happening and to try to provide an exhaustive list, I think it would be non-ending because the possibilities are quite extensive.

MS TADROS: Haidy Tadros for the record.

Sir, if I may just pick up on that last point and maybe what would help you, you indicated the reporting -- the regulatory document didn't indicate anything on the public. On one of our reporting requirements, number 8 speaks to the release or an injury that could trigger stakeholder interest. So it comes back to the notion, and I think you outlined it very accurately, this is about where the technology is, things get out very quickly.

I think one of the examples we can use here is, previous to using the duty officer, licensees would phone in to their project officer and that is still a very relevant way to provide information, but this regulatory document is trying to provide the licensees and the CNSC with a one-stop shop to let us know what happens because sometimes the project officer isn't available or something has taken them away from their desk and they

don't get the message in time. And if it was a fire or if it was an ambulance in the vicinity, through technology, through social media, it's all over the map, if you will, before the CNSC even knows that something has happened.

So the opportunity to capture the reporting requirement across the fuel cycle facilities, because there is such a high public interest around these facilities, they are sometimes in the community very high profile when it comes to public perception of what these facilities do, the regulatory document tries to bring that together and consolidate, again providing a baseline for all these types of facilities, an opportunity to report to the CNSC through the duty officer of things that might be of high stakeholder interest for example. We do have that captured in the regulatory document as number 8 right now.

THE PRESIDENT: Okay. Thank you.

Back to Dr. Soliman.

MEMBER SOLIMAN: I don't have a comment, but I have a recommendation. This recommendation is not mandatory, you can just take it or leave it, it's up to you. It will add to clarity of the document.

Class IB facility listing, an appendix for the Class IB nuclear facility. The glossary has been referred to in Regulatory Document-3.1.6, but you can pick

up all the related glossary and include it on the report so it will become very clear. And also the nomenclature or acronyms is not included in the report. So this, it's up to you to add it, but it will add more clarity to the document.

MS TADROS: Haidy Tadros for the record. Thank you very much. We will take that into consideration.

THE PRESIDENT: Mr. Seeley...?

MEMBER SEELEY: Maybe just a clarification. I noted on page 5 of the REGDOC it does define what "immediate" means in terms of, you know, the interpretation of the document, so that is there.

And, you know, I guess the table really is just trying to be helpful in the end, that it's capturing all of the other requirements under the GNSCR document, right, so that it's intended to be a helpful table rather than a precision list of things that are to be reported. So, you know, as long as the REGDOC is pointing to, you know, the individual's Licence Condition Handbook, that's where your reporting requirements are laid out and, by the way, pay attention to the Regulations because there could be additional requirements there as well.

So I get it, I guess just when I'm going through the list I'm thinking, boy, this is a long list and

is it growing and growing and growing every year, but I don't think that was the intent. So yes, I think my comments are taken care of, thank you.

THE PRESIDENT: Thank you.

Dr. Demeter...?

MEMBER DEMETER: Thank you again for that report. I guess to put into practice the commonsense theme that has come up, have there been any -- to show relative to the licensees that they sort of understand what they need to report, and that seems to be the message I'm getting from the various sectors, from a regulatory point of view have there been very many non-compliances to licensees or AMPs to licensees relative to not reporting appropriately? That would be a good measure of the reasonableness of the guidelines to date.

MS TADROS: Haidy Tadros for the record.

So I can confirm there hasn't been an AMP, there have been no administrative monetary penalties issued to licensees who have not adhered to their reporting requirements.

I believe Ms Kavita Murthy will have specific examples that she can share with regards to non-compliances that may have happened.

MS MURTHY: Kavita Murthy for the record.

So I wouldn't classify those as strict non-compliances with an intention to hide an event or a report from the CNSC. What does happen upon -- and we hope that we will address it with this document -- is licensees often are not clear on whether something is reportable or not and that is really the gist of what we are trying to get to with this document, is to say, you know, if it's this then yes it is reportable and within this timeframe. So the situations where we have had to have those conversations with licensees have been situations where they have not understood that the section 29 of the General Regulations apply. So that certainly has happened. We are hoping that it will happen less and less.

What has helped us tremendously is this very strong message that we sent out about a year and a half or so ago to licensees to report things to us through the duty officer and because the duty officer calls are sent -- reports are sent not just to the inspector or the project officer but to all of the management that is on the list and everyone that has an interest in it, it makes absolutely sure that events are not missed, that we are not ever in a situation where an inspector is on an inspection and not able to take a call about an emergency or an event at a facility.

MEMBER DEMETER: Okay. Thank you very much.

THE PRESIDENT: Thank you.
Dr. McEwan...? Back to Dr. Soliman...?
Mr. Seeley...?

MEMBER SEELEY: I'm good, thanks.

THE PRESIDENT: I think I'm good. So thank you, thank you very much.

I was just going to add that in terms of non-compliance, we used to -- I remember many occasions where the licensee would try to, before coming to us with a reportable, would try to assess how risky it was, whether it was safety significant or not. So they tried to do the calculation before coming to tell us, well, yes it happened, but it wasn't that risky. So we wanted to make sure to unshackle them of that duty, they can come and tell us before doing the analysis. A lot of that happened.

So anyhow, I think there's a lot better clarity on all of this. So we will take it under deliberation and thank you.

We are going to take -- okay, we will take 15 minutes.

--- Upon recessing at 4:25 p.m. /

Suspension à 16 h 25

--- Upon resuming at 4:44 p.m. /

Reprise à 16 h 44

THE PRESIDENT: I think we saved the best for last. Is that what ...?

So the last item of the agenda today is an information item on Canada's participation in the Seventh Review Meeting of the Convention on Nuclear Safety. This is outlined in CMD 17-M51. And there are representatives from industry with us here today in attendance and by teleconference.

So and Mr. Lee from CANDU Energy is joining us. Can you hear, Mr. Lee, can you hear us?

MR. LEE: Dr. Binder, it's Albert Lee from CANDU Energy. Yes, I can hear you.

THE PRESIDENT: Okay. Welcome.

And we have also Brian Ahier from Health Canada and we also have the president of the convention, who is sitting there at the corner. How come you're not

joining us kind of in the front for -- at least for colour commentary when we talk about the Canadian delegation.

Okay. So I understand now Mr. Frappier, you'll make the presentation. Over to you.

CMD 17-M51

Oral presentation by CNSC staff

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

For the record, my name is Gerry Frappier, and I'm the director general of the Directorate of Power Reactor Regulation.

Today I have the pleasure to present for information the results of Canada's participation in the Seventh Review Meeting of the Convention on Nuclear Safety. And we'll explain a little bit about what the Convention on Nuclear Safety is with our presentation.

As you mentioned, with me are both CNSC staff members and industry and other government department members who were part of the delegation to the Seventh Review. And as you also noted, Mr. Ramzi Jammal is here, and he was the president of the entire Seventh Review meeting, and we'll explain that in a minute or two as well.

I guess our slides are not -- yeah. There we go.

Following an introduction that includes important background information on the Convention on Nuclear Safety itself, today's presentation will provide some details on the review process leading up to and including the Seventh Review meeting. We will also focus on the specific review results for Canada, including findings on which Canada will follow up at the next Eighth Review meeting. And I will then finish with some concluding remarks.

But first, I'll begin with a brief description of the CNS, its obligations, processes, and structures.

The CNS was drawn up in the aftermath of the nuclear accident at Chernobyl in 1986. It is an international agreement that came into force 10 years later to attain three main objectives: to achieve a high level of nuclear safety worldwide, to ensure effective defence against potential radiological hazards at nuclear power plants, to prevent accidents and mitigate radiological consequences, should they occur.

Nuclear safety for the purpose of this obligation of the CNS is in the context of nuclear power

plants.

The Convention on Nuclear Safety is described as an incentive instrument which seeks to promote nuclear safety, primarily through a peer-review process. As a contracting party, Canada along with other contracting parties has the responsibility to provide sufficient information to facilitate its review and to participate in the review of other contracting parties.

There are no specific enforcement mechanisms within the CNS; rather the emphasis is on identifying areas where nuclear safety can be improved and, two, learning from measures that contracting parties have already taken or are taking to improve safety.

The responsibilities of the contracting parties are described in the articles of the Convention. There are articles that describe the general obligations of the contracting parties in the peer-review process. There are also specific articles that identify the required content of the national reports. Those are listed in subsequent slides.

In terms of the general obligations, all contracting parties are required to participate in the ongoing peer-review cycle, which is organized every three years. Contracting parties submit national reports that

address the specific obligations of the Convention roughly seven months before the review meeting. They then review the reports of other contracting parties, pose written questions to other contractor parties based on their review, and respond to written questions that they have received. Finally, contracting parties attend the review meeting itself, where there are summary presentations that include updates followed by additional discussions and recording of the main conclusions of the peer review for each contracting party.

A typical national report for the CNS is organized according to article 6 through 19, which cover the specific obligations of each contracting party. These articles are aligned with the safety framework of the IAEA safety standards and start with the overall legislative framework, the recognition that operators have the primary responsibility for safety, and that regulatory bodies have the role of ensuring that operators uphold that responsibility. They also cover specific technical areas and the life cycle phases of siting, design, construction, and operation of nuclear power plants.

These obligations are fulfilled by the contracting parties as a whole, for instance, at the level of the federal government, but also by the relevant

regulatory bodies, the designers and operators of nuclear power plants, and other important stakeholders.

Although the CNS articles are relatively comprehensive, there are certain areas relevant to nuclear power plants that are out of scope of the CNS. For example, the articles do not address nuclear security, safeguards, non-proliferation, decommissioning, or packaging and transport.

The topics of waste management is covered under article 19, but only insofar as it pertains to day-to-day operations of a nuclear power plant. Other aspects of waste management are more comprehensively addressed in the complementary convention which is the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

A note about article 6. Strictly speaking, it only applies once as a requirement to justify the safety of continued operation of nuclear power plants that already exist at the time of the ratifying of the convention. However, contracting parties have decided to use this article as a vehicle to report at each review meeting on the ongoing safety of existing nuclear power plants.

I would also like to note that many of

these articles are not directly applicable to all contracting parties, since some do not have operating nuclear power plants. Some contracting parties without nuclear power plants opt voluntarily to report under these articles on measures they have taken with respect to other types of nuclear facilities such as research reactors, even though strictly speaking research reactors are outside of the Convention.

For the Seventh Review meeting, the contracting parties were organized into seven country groups. The conclusions of the peer review of each national report were determined by consensus of the other contracting parties within the respective country group. The country group members drafted a country review report for each of the contracting parties and finalized it at the Seventh Review meeting.

These documents, which were used for the first time at the Seventh Review meeting, were considerably larger than the records of the peer review generated at previous review meetings, and the content was reviewed much more systematically. The country review reports highlighted main findings in the categories of challenges, suggestions, good practices, and areas of good performance. We will define these categories later in the context of the

peer review results for Canada.

I will now turn the presentation over to Mr. Gracie, who will provide details on the specific outcomes of the Seventh Review meeting.

MR. GRACIE: Good afternoon, Mr. President and Members of the Commission.

My name is Brian Gracie, and I'm a senior regulatory program officer in the Directorate of Power Reactor Regulation.

I will provide some of the details and results related to the latest CNS review. I'll begin with a description of the review process leading up to and including the Seventh Review meeting.

The Seventh Review meeting was run by 31 CNS officers who have responsibilities to organize and execute the review. There are three officers with general responsibilities. The review meeting president is supported by two vice-presidents. The other officers facilitate the individual peer reviews of contracting parties at the country group level.

Out of the 31 CNS officers, Canada held two officer positions at the Seventh Review meeting. This was comparable to previous review meetings, but this time Canada had the honour to fill the lead role, with Mr. Ramzi

Jammal of the CNSC serving as president of the Seventh Review meeting.

Mr. Jammal and his team drove much of the improvement in participation and openness and transparency observed at the Seventh Review meeting. These successes were the result of significant effort from CNSC, Global Affairs Canada, and others. In addition to initiatives that will be described in subsequent slides, the president and his team arranged webcasting of the opening plenary, segments of the closing plenary, and the press conference. They also invited signatories to the Convention that had not yet ratified it to attend the opening plenary and segments of the closing plenary.

In addition to Mr. Jammal, Mr. John Froats, a professor at University of Ontario Institution of Technology with considerable CNS experience, served as the rapporteur in country group number two. A critical part of his role as rapporteur was the drafting of 12 country review reports for his country group, which involved considerably more effort than previous meetings.

Mr. Jammal and Mr. Froats will continue in their roles as officers until the organizational meeting for the next review cycle, which is scheduled for next fall.

At the time of the Seventh Review meeting in March of this year, there were 80 contracting parties, which included 79 countries and one organization, Euratom. Regional organizations such as Euratom of an integration or other nature, consisting of sovereign states, are also permitted to become contracting parties.

At the time of the Seventh Review meeting, there were 10 IAEA member states that had signed but not yet ratified the Convention. The number of contracting parties has increased since the Seventh Review meeting. The Convention took effect for Madagascar just after the meeting. Cuba and Syria also ratified the Convention in 2017, thanks in part to the efforts of the president of the Seventh Review and his team. At present, eight IAEA member states have signed but not ratified the CNS.

I will now describe the general state of participation in the CNS review process. Fulfillment of the CNS obligations is facilitated by a network of national points of contact who are in regular communication with the CNS secretariat which is provided by the IAEA. This was the first time that all contracting parties have named a national point of contact.

The president and his team also had a positive impact on specific aspects of the review cycle for

the Seventh Review meeting. Through lobbying and promotion, they helped ensure that nearly all the contracting parties submitted national reports for the review meeting, the best results for any review meeting to date.

Contracting parties also responded to the president's call for openness and transparency related to the national reports. Twenty-one contracting parties proactively posted their reports on the IAEA public website by the time of the Seventh Review meeting, Canada included. Other reports were posted by the CNS secretariat on the IAEA's public website 90 days after the closure of the Seventh Review meeting.

So participation was better for the Seventh Review meeting, but there's always room for improvement. As a footnote, it should be stated that the types of shortcomings being described in this slide and the next couple of slides, either with respect to CNS obligations or expectations, generally pertain to contracting parties that do not have nuclear power plants.

Participation in other aspects of this CNS review process, including enhancement of openness and transparency, was also improved for the Seventh Review meeting as compared to previous reviews. Reviewing the

national reports of other contracting parties is a significant task and the benefit of such effort is not always immediate or obvious; nevertheless, a record number of contracting parties did post written questions to other contracting parties as part of the Seventh Review.

The president of the Seventh Review meeting encouraged all contracting parties to post their answers to the questions that were posed to them. Although this level of openness was not the norm of previous review meetings, four contracting parties proactively posted their responses to questions on the IAEA public website by the time of the Seventh Review meeting, Canada included. Currently, eight contracting parties have posted their answers to written questions on the IAEA website, and others have posted them on their own national websites.

By various measures, the Seventh Review meeting itself was a success. Over 900 delegates attended, and the attendance rate for contracting parties was the highest for any review meeting. However, of the 77 contracting parties that registered for the Seventh Review meeting, three of them were not present for their own national presentation. CNS review meetings typically have a few no-shows; nevertheless, the peer review in general was challenging and active exploration and debate was

witnessed in many review sessions.

At the Seventh Review meeting, contracting parties in each country group recorded peer review results and country review reports for each contracting party in the group, even if it did not attend the meeting. The president of the Seventh Review meeting encouraged all contracting parties to post their country review reports, which has been done by Canada and some other contracting parties.

As a concluding comment on the general results of the review cycle, I would say that the enhancements of the documentation of review results and of openness and transparency were significant accomplishments. Replication of these positive results at the next review meeting will again require significant commitment on the part of the next set of officers and the contracting parties.

The last slide in this part of the presentation shows how the 80 contracting parties were divided into the seven country groups. The number in parentheses is the number of operating nuclear power plants in the country. Less than half of the contracting parties had operating nuclear power plants at the time the list was compiled.

In the context of the overall review process, I'd now like to describe the specific results of the review for Canada at the Seventh Review meeting.

Contracting parties are guided to include various stakeholders in the CNS peer review. Canada is a leader in this regard. Although the CNSC plays the lead role in coordinating the project, critical contributions continue to come from numerous organizations. The ones listed here contributed to deliverables such as Canada's report, the responses to questions, the questions to other contracting parties, the presentation, the discussions at the review meeting, and the various organizational communications activities associated with all those outputs.

This slide shows the entire Canadian delegation for the review meeting itself. The head of delegation was Mr. Gerry Frappier. In addition to the personnel who supported Mr. Jammal as president, the delegation included other CNSC staff members and representatives from industry and Health Canada.

The Canadian delegates represented Canada while bringing their specific expertise from their roles in licensee and government organizations. They helped explain Canada's fulfillment of the CNS obligations and how it

progressed since the last review meeting. They also attended the presentations of other contracting parties and followed up in those discussions while championing the principles of openness and transparency.

In terms of Canada's role as a leader of the CANDU community, Canadian delegates influenced proceedings in a manner to optimize the value of the review process for CANDU countries. For example, they provided detailed information to CANDU countries that faced specific questions related to CANDU technology. They also reviewed the outputs of the review meeting to ensure that they were easily interpreted in the context of CANDU technology, operation, and regulation.

Mr. Froats, Mr. Jammal, and his support staff worked to make sure the review ran smoothly. Delegates also attended various plenary sessions, side meetings, and the meetings of the Open Ended Working Group to discuss proposals to improve the CNS.

I will now turn to some of the actual results of the peer review. Written comments that were submitted to Canada as well as informal comments received at the review meetings indicated that other contracting parties regarded Canada's report as one of high quality. It was one of the first to be posted for the public to

read.

Canada continued to be a leader in the review process, posting 385 questions and comments on the reports of 29 other contracting parties. These questions and comments were directed to the 11 other contracting parties in country group 3, which was our country group, as well as other contracting parties in which Canada traditionally has an interest, including CANDU and G7 countries.

Canada received a total of 164 written questions and comments on its report from 20 contracting parties. Distributed across the articles of the Convention, as shown on the slide, I can illustrate the nature of the questions with a few examples. Some of the questions on article 7, the regulatory framework, requested clarification of the role and content of the licence conditions handbook. Some of the questions on article 8 requested information on self-assessment and audit at the CNSC.

I'll now focus on highlights of the review of Canada at the review meetings. This slide shows the six challenges for Canada that were identified back at the Sixth Review meeting three years ago. Per CNS guidance, Canada provided specific information in its report and its

presentation to show how it had addressed these challenges. Based on a review of the information, four challenges were concluded to be closed and two were concluded to remain open.

The first challenge listed was the completion of the CNSC Integrated Action Plan in response to the Fukushima Daiichi accident. Canada demonstrated how the Fukushima action items that were open at the time of the Sixth Review had been closed with some follow-up being conducted in the context of station-specific action items. On that basis, the peer reviewers in country group 3 concluded that this challenge was closed.

Second, there was a challenge to enhance probabilistic safety assessments by considering multi-units and irradiated fuel bays. Based on the publication of updated regulatory requirements and the licensees' work to address them, this challenge was also declared as closed.

Third was a challenge to establish guidelines for the return of evacuees following a nuclear accident and to confirm the acceptability to the Canadian public. This challenge remains open. It will be carried forward to the Eighth Review meeting and follow-up is discussed in a subsequent slide.

Fourth was a challenge to invite an

emergency preparedness review mission, which is a review service offered by the IAEA. Health Canada and stakeholders have completed emergency exercises to validate the federal nuclear emergency plan and have implemented lessons learned. Health Canada and CNSC staff have also participated in such missions in other countries to observe best practices. Prior to the Seventh Review meeting, Canada wrote to the IAEA requesting such a mission for the target date in 2019.

The fifth challenge from the Sixth Review meeting was to update emergency operational interventional guidelines and protective measures for the public during and following radiological events. This challenge also remains open. Follow-up is discussed in a subsequent slide.

Finally, there was a challenge to formalize the approach to the transition to the decommissioning phase of a nuclear power plant, which was identified in the context of Gentilly II. This challenge was closed based on the work at Gentilly II to transition to a safe storage state, the development of CNSC's licensing strategy, which led to the replacement of Gentilly II's licence to operate with a licence to decommission, and the adaptation of CNSC's compliance

program to suit the decommissioning activities.

At the Seventh Review meeting, the peer reviewers in country group 3 identified three new challenges for Canada and one suggestion. They are related to amendments to the regulations, CNSC REGDOCS, and of operation of multi-unit NPPs and CANDU safety issues.

In the context of CNS review results, a "challenge" is defined as a difficult issue for the contracting party beyond day-to-day activities and/or a weakness that needs to be addressed. A "suggestion," on the other hand, is considered an action needed to improve the implementation of the obligations of the Convention.

To summarize, this slide shows all findings that will be carried forward to the Eighth Review meeting: the two open findings from the Sixth Review meeting and the four new findings from the Seventh review meeting. We've numbered them for ease of reference, with "C" indicating a challenge, and "S," a suggestion.

The next six slides provide an update on progress towards resolution of each of these findings.

To begin, challenge C1 for Canada carried over from the Sixth Review meeting is to establish guidelines for the return of evacuees following an accident and to confirm their acceptability to the Canadian public.

To address this, CNSC has benchmarked recovery measures and collaborated with Health Canada on a discussion paper on the proposed framework for recovery. Following a consultation with provincial and federal partners, the discussion paper on the framework for recovery in the event of a nuclear or radiological emergency was issued for public consultation until January 27th, 2018. The plan is to publish the framework, which includes guidelines for evacuees, in the next CNS reporting period so that it can be reported as complete in Canada's report for the Eighth Review meeting.

The other challenge that was carried over from the Sixth Review meeting is to update operational interventional guidelines for emergencies and protective measures for the public during and following major radiological events. To address this, Health Canada completed the consultation and updated the Canadian Guidelines for Protective Actions during a Nuclear Emergency to address comments received during this and previous public consultation. The guidelines address protective measures and operational interventional guidelines for the public, which include evacuation, sheltering, iodine thyroid blocking, and water and food consumption. Health Canada had approved the revised

guidelines and plans to publish them by the end of this year. It is expected that the revised guidelines will be fully incorporated into revised provincial nuclear plans, thereby serving as a basis for harmonization.

Challenge C3 for Canada, introduced at the Seventh Review meeting, is for the CNSC to publish the drafted amendments to the Class I Nuclear Facility Regulations and the Radiation Protection Regulations that address lessons learned from the Fukushima Daiichi accident. These amendments were published in the *Canada Gazette II* on October 4th, 2017. Canada will report in its next national report that this challenge has been addressed.

Challenge C4 is for the CNSC to complete its transition to the improved regulatory framework, that is, the REGDOC series. CNSC continues to modernize its regulatory framework based on a prioritization of various projects. Completion of the work by fiscal year 2019-2020 will allow Canada to report at the Eighth Review meeting that this challenge has been addressed. This will be accompanied by information on the implementation of the new and revised regulatory documents that are applicable to nuclear power plants.

Challenge C5 is for Canada to formalize

the planned approach to the end of operation of multi-unit nuclear power plants. I've already described how CNSC has developed a regulatory process for transition of a nuclear power plant from the operational phase to the decommissioning phase. This process will be updated as the decommissioning of Gentilly II continues and as the ends of life of existing multi-unit nuclear power plants approach.

The CNSC report for the Eighth Review meeting will include details on steps being taken at Pickering as its units proceed toward end of operations. The framework for this transition will also be updated when CNSC replaces its existing guide on Decommissioning Planning for Licensed Activities with the new REGDOC-2.11.2.

Suggestion S1 identified at the Seventh Review Meeting is for Canada to address the remaining Category 3 CANDU safety issues. Three of these issues are related to large break loss of coolant accidents. Specifically the issues being addressed, are the analysis for void reactivity coefficient, fuel behaviour and high-temperature transients, and fuel behaviour and power pulse transients.

The other Category 3 CANDU safety issue deals with the systematic assessment of the effects of high

energy line breaks. The resolution of these issues was already described for the Commission in two previous CMDs.

CNSC and industry stakeholders expect that the work to satisfactorily address these remaining issues will be completed during the next CNS reporting period, which will allow Canada to state in its report for the Eighth Review Meeting that the suggestion has been addressed.

Besides challenges and suggestions the peer reviews also identified positive findings for Canada which are described in the next two slides. A good practice in the context of the CNS is a new or revised practice, policy or program that makes a significant contribution to nuclear safety. A good practice is one that has been tried and proven by at least one contracting party, but has not been widely implemented by other contracting parties and is applicable to other contracting parties with similar programs.

At the Seventh Review Meeting peer reviewers applied the criteria for good practices more consistently and strictly than had been done in previous review meetings. Canada received one of only four good practices that were awarded at the Seventh Review Meeting for CNSC's participant funding program, which was

recognized as fostering openness and transparency and increasing safety by providing additional information to the Commission.

Hungary was awarded the good practice for its extensive outreach to the public and neighbouring countries, conduct of public hearings for licensing and educational conferences that went well beyond that generally undertaken by other contracting parties.

Euratom was awarded the other two good practices; one was for proactively organizing a topical peer review related to the nuclear safety directed before its actual transposition by European Union member states, the other was for the implementation of the instrument for Nuclear Safety Cooperation Program for assisting countries outside the European Union.

An area of good performance in the context of the CNS is a commendable practice policy or program that has been implemented effectively. It is a significant accomplishment for the contracting party, but does not have to be unique among contracting parties.

Canada received eight areas of good performance, the most of any contracting party at the Seventh Review Meeting, they're listed on this slide. You can see that they span a variety of topics, some are

accomplishments for the CNSC, whereas others are accomplishments for the industry.

Regarding the last bullet, it is noteworthy that Romania also got an area of good performance for its use of the CANDU Owners Group weekly screening OPEX process, an example of how Canadian industry is positively influencing nuclear safety worldwide.

Canada was active in the open-ended working group where four proposals to improve the CNS were discussed. Canada put forward two of the proposals and was a major contributor to another proposal, which was jointly submitted by 12 contracting parties.

There was no consensus on Canada's first proposal to post videos of national presentations after they are delivered. Although the idea was to post only a video of the presentation itself, and not the debate or conclusions within the country group that follows that, contracting parties had concerns about maintaining the confidentiality of the review, which is an obligation of the convention.

Contracting parties were also worried about public perception in the inevitable circumstance where some presentations would be better prepared, delivered or filmed than others.

A decision on the second proposal from Canada was deferred to the CNS officer turnover meeting in March 2019. It involved the continuation of an earlier improvement initiative to develop a template for writing the text for specific articles in the national reports.

The German proposal, although approved, was greatly scaled down and will not have a significant impact on the CNS review process.

Certain parts of the joint proposal were approved by contracting parties. For example, it was agreed to conduct a survey at each review meeting to evaluate the effectiveness of recent process improvements, changes to CNS guidance, et cetera.

As another example, contracting parties also agreed to hold CNS education workshops to highlight awareness of the obstacles and challenges to participation for countries without nuclear programs. Other parts of the proposal that were accepted will enhance the review meetings and openness and transparency.

CNS review meetings are always an occasion to stage side meetings that are outside the process, such as bilateral and multilateral meetings of contracting parties and technical and other information sessions. At the Seventh Review Meeting there was a presentation by the

delegation from India on the pressure tube releases at Kakrapar, which drew interest from the CANDU community, the World Association of Nuclear Operators (WANO), and the Institute of Nuclear Power Operators (INPO).

India described its ongoing investigation and testing related to the events, which occurred in 2015 and 2016. The presentation led to further discussion through bilateral meetings between Canada and India where Canada pressed for more details related to the event, and offered to assist with India's investigation.

Another side event was a panel discussion involving the IAEA and WANO about the importance of cooperating at these institutional levels to maintain and improve nuclear safety. The sharing of limited resources, elimination of duplicated effort, and increase in efficiency of review services offered were major themes.

The two bodies also endorsed the harmonization of approaches to ensure strong safety culture among nuclear operators and regulatory bodies, including those in countries developing nuclear power programs and approaching the operational phase.

MR. FRAPPIER: Thank you, Brian, Mr. Gracie. For the record, it's Gerry Frappier again. I'd like to provide brief concluding remarks on the results and

benefits to Canada related to participation at the Seventh Review Meeting of the Convention on Nuclear Safety.

The Seventh Review Meeting continued to demonstrate the value of the CNS peer review process. It was a learning experience where we gained exposure to issues that affect the safety of nuclear power programs and the successful measures that countries are taking to address them.

Canada also shared information on areas where we or other countries thought we were doing well. The Seventh Review Meeting was also a challenging experience where Canada and others were questioned at length by peer countries, held accountable for open findings from previous review meetings, and assigned new challenges and suggestions that are expected to be addressed by the Eighth Review Meeting.

Canada was a major player at the Seventh Review meeting. We reviewed many national reports, posed many written questions to those countries, followed up at the review sessions in the country groups and helped develop the country review reports in our country group.

Our own report, presentation and response to questions demonstrated leadership in nuclear safety, regulatory excellence, openness and transparency. Our

country review report identified some areas where we should continue to work in the next three years, and our fulfilment of the role of President resulted in significant improvements in the CNS participation and accountability.

Finally, we helped drive some improvements that will take effect for the Eighth Review Meeting, including those that should enhance participation in the review process and openness and transparency.

The last slide here is for our references, and it provides links to some of Canada's main CNS outputs for the Seventh Review Meeting.

This concludes Staff's presentation. We, as well as other members of the Canadian delegation from Industry and Health Canada are available to respond to any questions you may have. Thank you.

THE PRESIDENT: Thank you. So before we open the floor here, does the President of the Convention want to say anything about the Convention?

MR. JAMMAL: For the record, I'm Ramzi Jammal. Thank you for providing me the opportunity to, first of all, thank the CNSC Staff in making the Convention a success. I could not have done it without many of our colleagues in the room.

At the same time, for the first time, we

engaged our legal section unit that were both a participant and your senior counsel, sir, was keeping me out of jail internationally by providing me with guidance.

I put a lot of challenges into the Convention itself. We were successful in some, and were very tough on the others to fulfil. But as mentioned by my colleagues, we're looking forward for the Eighth Review, and I'm still on the hook to organize the Eighth Review Meeting so we still have some input with respect to global nuclear safety. Thank you.

THE PRESIDENT: Thank you. Dr. McEwan.

MEMBER MCEWAN: So thank you, that was very interesting, and I guess congratulations on what looks very successful. I'd be interested just in industry's perspective on this as part of the delegation and how they see it contributing to the Canadian environment and going forward?

MR. BURTON: Maury Burton from Bruce Power, for the record. From my perspective, it's an interesting couple of weeks when we're over there. The focus is really on nuclear safety and, for us, it's a good opportunity to interact with other countries, in particular the regulatory staff from other countries, which we really don't often get the chance to talk to those folks.

So we do bring back a lot of good practices through attending some of the sessions and we try to also meet with some of the other industry folks that are over there as well. I know Mr. Frappier and I met with the Koreans when we were there to talk about the site PSA, which was one of our topics earlier today, and the work that we were doing through COG and how we could cooperate on that.

So there are a lot of good practices. The one thing I do find is that it does get to get a little political, which these things tend to do. I will compliment Mr. Jammal, this is the fourth review meeting that I have attended, and Mr. Jammal and his predecessor, Mr. Lacoste from France, have gone a long way to try to pull the nuclear safety priority ahead of the political will which at times in these forums is difficult. But I think they've done a good job in steering in the right direction and setting the direction for the Eighth Meeting.

DR. LORENCEZ: Carlos Lorencez, OPG. I only attended the first week, but it was a very intense week. I participated in a large number of presentations, so in different countries. My overall impression was that, as Maury was saying, it's a great opportunity to connect with other people and to learn what they are doing and what

they're planning to do.

But my overall impression was that Eastern Europe still has a lot of work to catch up with Western, with the west world, in aspects on nuclear safety. They are still struggling, trying to gain independence from Russia and their designs or the leftovers of Russia and the Baltic states, for example, and they are not rich countries.

So they are trying to do their best, but still there is some work to be done to bring those up to the high standards that we have in North America and Europe, for example.

The other aspect is that we in the industry, we place importance on sharing OPEX all the time. We want to learn, we are learning organizations, and we want to learn from each other, but it's not always the case.

In the case of India, the information wasn't coming quickly and we had a couple of conversations with them and, in the end, they accepted help from Canada, and we expect to have a good outcome in the end.

THE PRESIDENT: You're not industry, but you can share your impression, Mr. Ahier. Go ahead.

MR. AHIER: Thank you. Brian Ahier, for

the record, Health Canada. I think the opportunity to participate in the delegation to the CNS is very important. Health Canada brings expertise into particular areas that are covered under the Convention, and I think it provides as a good opportunity to not only contribute to the Canadian delegation, but also to hear the experience of other countries in areas of interest to us.

One other thing I would flag though is that being part of the delegation also gives us one of those infrequent opportunities to link in with all of the community; the regulator, Health Canada, the industry, and to have discussions on topics of interest.

THE PRESIDENT: Mr. Lee, anything that you want to share with us?

MR. LEE: Certainly. It's Albert Lee from Candu Energy, for the record. I also attended only the first week. From the perspective of being a person representing a reactor designer the opportunity to participate at the review meeting on the Convention of Nuclear Safety provides us with insight into how similar regulatory requirements in different countries can result in a different outcome, depending on how each regulator applies their judgment and interpretation to the regulatory requirement.

What is, I think, very enlightening and very helpful is that the approach that the Canadian regulator takes is a middle ground that tends to bridge the interpretations and understanding that regulators that are both less experienced and less sophisticated than the CNSC and the older more established regulatory agencies in countries like the United States, United Kingdom, Finland, France, and the insights gained from it help to help us at least to determine how best to offer the highest level of safety in the reactor design without unduly burdening the reactor with high costs.

So it also helps with Canadian suppliers of equipment to know that when specifications are made for procuring equipment from Canadian suppliers for nuclear power plants that if they generally meet all the Canadian regulatory requirements they have a good chance of being able to sell that equipment overseas as well.

THE PRESIDENT: Thank you. Dr. Demeter.

MEMBER DEMETER: Thank you very much.

First of all, kudos to CNSC Staff and to the delegates and to the leadership for this meeting through Mr. Jammal, it's an impressive piece of work.

Also I was delighted to hear that the Health Canada document will be coming out soon. I remember

a while back making comments on a very draft version of that. So I'm glad to see that out and that will be very helpful.

Notable by its absence, I was curious, I didn't see England or the United Kingdom on the list of participants. I saw Ireland. Has the United Kingdom participated previously, and I just want to get a comment. They seem to be a significant player, given their history. I know that their radiation protection group has been subsumed by a larger sort of group within England, based on my ICRP experience.

But maybe someone could comment on England's absence?

MR. FRAPPIER: Gerry Frappier, for the record. No, England was definitely there.

MEMBER DEMETER: Was it?

MR. FRAPPIER: If you look at Slide 15 and --

MEMBER DEMETER: Oh, I see, it's under UK.

MR. FRAPPIER: -- country group 6. Yeah, it is called the UK though.

MEMBER DEMETER: I tried to look for United Kingdom, England and --

MR. FRAPPIER: Yeah, it's just a

short-form of the UK.

MEMBER DEMETER: I'll retract my question.

MR. FRAPPIER: But, yeah, and they certainly participate very actively.

MEMBER DEMETER: Makes more sense now. Thank you. Well, kudos anyways. Thank you.

THE PRESIDENT: Dr. Soliman.

MEMBER SOLIMAN: My sincere congratulations to the Canadian team, CNS's team also, and Mr. Jammal and Mr. Frappier.

I have some questions about the presentation given by the Indian delegation. I understand that you had discussions with them, studied the accident which happened to the pressure tube release. Do you think that we can benefit from that accident, initiating events definition in our safety cases such as pressure tube, calandria tube rupture or end-fitting ejections or others?

MR. FRAPPIER: Gerry Frappier, for the record. Certainly, yes, I mean we always want to have information from events that occurred anywhere else, and the Indian design is very very similar to the CANDU designs. I think at the Convention it was quite interesting because, as was mentioned by industry there, India had arranged -- because basically we pushed very hard

for India to make a presentation, because it was a major event.

They gave a presentation that was, you know, pretty high-level without the kind of detail that this sort of group would expect. Because, of course, the thing that's interesting about this is you have a lot of experts around.

Certainly in our case we had ensured that we had some metallurgical and pressure tube experts with us on our delegation, and, in general, people were not so satisfied with the forthcomingness of India in the case to the point where we basically made a bit of an issue out of it and ended up getting another meeting with them because they agreed that bilaterally they would give us a lot more information.

At that point, we did get a lot more information that was more technically relevant. What we're actually going to learn from it, we're still seeing how much of it has to do with poor quality control on their annulus gas, which is certainly the big thing that they found out that it was causing lots of corrosion. We do not have that problem here because we deal with annulus gas differently than those units do.

But having said that, it was very

important for us to find out that that's what they were thinking, so we could turn around to our industry and say, hey, do we have this problem? Please go check exactly how you do these things, which industry did undertake and responded and brought us information.

I think down the road, as we learn more about the manufacturing side of things and that, which they still have not finished their investigation, I think we'll learn even more that perhaps we can apply. But certainly, we'd want to make sure we don't have similar problems.

I think what the Convention did was -- it's very powerful, a peer review from all these countries, and India very very much felt that they all of a sudden have to do something because all the countries were saying it's not sufficient what you're doing, and they would have ended up with some very big challenges coming out of this Convention if they hadn't sort of turned around and started saying, okay, we'll provide a lot more information.

We've met with India now several times since this Convention on Nuclear Safety, so there's much more of an exchange of information going.

THE PRESIDENT: Mr. Seeley.

MEMBER SEELEY: Thanks for the report, I think it's very good news for the Canadian situation.

I just had maybe a question just around the number of facilities in the world, nuclear facilities in the world largely, I think Russia and China are the countries building the new facilities. But Canada, sitting there with the 19 reactors and the fact that we've refurbished many of these reactors and are now extending the life for, you know, another 30 years puts us really right in the middle of the whole lifecycle of our facilities still.

So I think it, for that -- you know, the importance of being involved in this and being centre of it is, I think, for me still -- it is a very important activity that we stay engaged in and see what's going on in the world.

I think the whole idea of refurbishment of reactors and extending life could be other key learning coming out of this. I don't know how many other countries are actually doing this. It would be -- I'm just curious to know that -- I expect probably others are, but maybe we're leading in this area as well.

Any comments on that one?

MR. FRAPPIER: Gerry Frappier, for the record.

Maybe I'll say something and then industry

may want to add something as well.

But certainly the CANDU reactor provides for this refurbishment that we're talking about as far as replacing pressure tubes and major component replacement. And we are going through that.

And other CANDU countries are either going through it or are planning to go through it, so we have Argentina who's right in the middle of it right now. Korea just finished one. And Romania is looking at doing some.

So for the CANDU technology, that is a real important set of projects that people are considering and some are doing.

For other technologies, they're really going into long-term operation, if you like, and aging management, the same way we are, so a lot of those things are similar as far as challenges for the regulator as to getting older plants and how they make sure they're safe.

We have the benefit of going through refurbishment, in which case we're going to get nice new pressure tubes and that.

For the other countries, it's much, much more involved, and given the pressure vessel they have, how long can they keep it going. And so the original design considered certain number of years, so there's a lot of

research, a lot of work being done and a lot of exchange of information as to can they really stretch that out to 80 years or so.

So they're very much involved in aging effects like we are, but maybe handling it a little bit different than CANDU countries.

And then you have the crop of countries, as you mentioned, who are building a lot of new nuclear plants, or even more interesting is countries that are first embarking on a nuclear power plant and they just don't have the big technical group and that expertise.

But I don't know if industry wants to add to that.

MR. BURTON: Maury Burton, for the record.

I think Gerry covered it quite well. CANDU's a bit of unique technology where we can replace the pressure tubes and -- with new pressure tubes and essentially have a new core, whereas you have the pressurized water reactors, the boiling water reactors, where you can't really do that.

So they are really looking at more life extension activities and aging management, as Gerry said, though I will note it was a discussion topic during the U.S. presentation at the convention about going to 80-year

licences for the folks that have the 60-year licence now. And just recently in the press clippings that -- I can't remember which news group it was, but it's one of the nuclear ones. I forget. World Nuclear Association or the CNA.

I saw one of the American plants has notified the NRC of their intent to go for an extra 20 years on top of their 60, so those -- those requests are going to come. And as an industry, we will be working with WANO and other -- for us in the Canadian industry, COG, on ensuring our aging management programs are in good shape to manage operating these facilities out that long.

MEMBER SEELEY: Thanks for that.

MR. JAMMAL: Mr. Seeley, as President of the convention, what I'd like to do is table my present report to the Commission. I think we failed to attach it to the presentation.

This isn't a public document because I was bound by confidentiality, and if you read between the lines, I've transformed some of the -- summary report which is -- requires consensus by the contracting party that's not publicly available. It's on the secure web site of the CNS.

But to answer your question, from global

perspective and as President of the CNS, one of my recommendations for contracting parties to report on for the eighth review is the managing the safety of aging facilities and plant life extension. And that's one of the high stress of the global nuclear safety is facing in addition to the life extension.

Quite a challenge and challenging for global nuclear safety are emerging countries who are coming on board with the turnkey operation being bound by contracts to the point that the contracting parties themselves are facing challenge in the peer review, are they ready to emerge on nuclear power.

So there is a lot of challenges from both ends of the cycle.

I won't call it the front end, but mid end reactors and then the life extension and the aging management.

So I will table that report to complete the presentation, and that will be the first time we're tabling present report to the Commission.

THE PRESIDENT: I assume also that this slide deck will be posted.

MR. FRAPPIER: Gerry Frappier, for the record.

Yes, it will be. And we should have had a reference on the IAEA report.

THE PRESIDENT: Yes.

MR. FRAPPIER: The President's report, rather.

THE PRESIDENT: You should put them both together, yeah.

Okay. Dr. McEwan?

Dr. Demeter.

Dr. Soliman?

So first of all, I cannot let Health Canada off the hook here. I mean, you're here.

So first of all, as you can see, particularly the emergency planning has been a big ticket item that we committed as a country to deliver on, and so I'm really glad to see that we've made a lot of progress. And also the EPREV that's coming in to actually test, get some peer review about our process in 2019, so thank you for that.

But I wanted to hear your opinion, the Ontario Auditor of Emergency Planning, it wasn't a good audit. Not for Ontario. I don't think for the Feds either because how can we allow -- how can you have allowed the Ontario government not to actually deal with emergency

No? Okay.

So now it is really closed, and anything you want to add?

MR. LEBLANC: Yes. Our guests from outside, don't forget to go and get back your IDs for those passes.

Thank you to all the technical people who assist us from webcasting, transcription, interpretation, our own staff that makes it happen.

Merci beaucoup à tous. Bonne soirée.

--- Whereupon the meeting concluded at 5:49 p.m. /

La réunion s'est terminée à 17 h 49