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Chair

Mr. Leon Benoit

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● (1530)

[*English*]

The Chair (Mr. Leon Benoit (Vegreville—Wainwright, CPC)): Good afternoon.

We're here today pursuant to Standing Order 108(2) to do a study on the Canadian Nuclear Safety Commission's decision regarding the transport of decommissioned steam generators to Sweden.

We have two panels at our committee today.

The first panel is from the Canadian Nuclear Safety Commission, Dr. Michael Binder, president and chief executive officer. We have Ramzi Jammal, executive vice-president and chief regulatory operations officer. We have Dr. Patsy Thompson, director general, director of environmental and radiation protection and assessment.

Welcome to all of you.

We'll start the panel as usual with the presentation. Could you go ahead with your presentation, please?

Dr. Michael Binder (President and Chief Executive Officer, Canadian Nuclear Safety Commission): Thank you, Mr. Chairman.

[*Translation*]

Mr. Chairman, Members of the Committee, good afternoon.

I am pleased to be here today to address the Commission's decision.

[*English*]

There's been a significant amount of misinformation circulating about this shipment. I hope you will find the following technical presentation useful.

I always appreciate the opportunity to provide clarity on a nuclear file, particularly given that our mandate is to actually disseminate some objective information.

[*Translation*]

We represent the Canadian Nuclear Safety Commission.

[*English*]

We were established in May 2000 under the Nuclear Safety and Control Act, which replaced the AECB that was established in 1946.

Some of you may not realize we are now celebrating our 65th anniversary. We're not planning to retire any time soon. We are very proud of our safety culture and our safety record, which I would like to argue is second to none.

We are a quasi-judicial administrative tribunal. All our commissioners are independent.

[*Translation*]

The Commission's hearings are public and broadcast over the Web. Our decisions are transparent and science based.

[*English*]

Let me start by trying to be very clear. Canada has a clear radioactive waste policy and all applicants to the CNSC must comply with that particular policy. It is based on the environmental principles of reduce, reuse, and recycle. There is a very well-defined international framework that explains what those words mean. There are domestic regulations and policies, and we've listed all the policies and documents that can shed light on this idea that there is no policy.

[*Translation*]

It is important to note that Canada has a clear policy on nuclear waste.

[*English*]

How is the transport of nuclear substances regulated?

First of all, all nuclear substances are governed by the International Atomic Energy Agency, which is governed by the international maritime dangerous goods code. There is a CNSC regulation for the packaging and transport of nuclear substances. There is a Transport Canada regulation for the transportation of dangerous goods. In the steam-generated case, you need a Swedish and a U.S. authority.

By the time anybody can comply with all those regulations, this would be the safest shipping of any hazardous material that I can think of.

There are many dangerous goods that are regularly transported in the St. Lawrence Seaway. There is a list, and if you look at the last item, it includes yellowcake uranium. They're shipped in and out every day of the year.

By the way, none of that shipping requires a municipality authorization to go through. It is routine business.

No precedent is being set. Millions of shipments of nuclear substances in Canada are transported every year. In Montreal alone, each year there are over 9,000 shipments that pass through the Montreal Trudeau Airport, over 1,000 shipments through the Port of Montreal, and over 50,000 medical isotopes. It is a routine activity, with no safety issues.

Why are there no safety issues?

● (1535)

[*Translation*]

We do not have problems because we use pre-approved packages.

[*English*]

We use internationally pre-approved transport packages. They are internationally approved, and therefore, when you package radioactive material in those packages, there is no need for any further approval. It gets shipped like any other commodity.

Let's turn to steam generators on slide 9. What's different about steam generators? It's their size. They do not fit in a pre-approved package, and therefore they require what is known as special arrangements. It does not mean they get a kind of “wink, wink, we'll approve it”. It means there is no approved package; therefore, we have to look at the safety case on a case-by-case basis.

I just point out to you that there are four grams of radioactive material. If we could put all of this in a pre-approved package, we wouldn't be appearing in front of you. This would have gone routinely through the system.

So what's inside those steam generators? If you look at slide 10, you will see that there are 65 kilometres of inner tubes. In those tubes, that's where water gets circulated and turned into steam. Over the 25 years of the life of the steam generator, there is a minute amount of radioactive deposit on the inside of those tubes.

It's important to understand that the outer shell is five centimetres of clean steel. I was trying to give you a scale. Do you see the little black box on the right? The width of the shell is five centimetres. This is not an aluminum cooking pot. This is a significant clean steel that provides safe package for the amount of nuclear material inside it. That explains why there's such low radioactivity on the outside.

If you look at slide 11, we actually compare some of the radioactive detection, the dose rate, beside the steam generator, and you can see its equivalent is less than the medical isotope boxes in which we ship all medical isotopes across the world.

If you look at slide 12, you will see that it compares the radioactive dose with background radioactivity and medical procedures, and you can see this is a really small amount of radioactive material.

On slide 13 there is one more kind of analogy, that the total amount of radioactivity inside a steam generator is less than the amount of radioactivity in a pacemaker.

Okay, so let's turn now to *le processus de la commission*. We held public hearings on September 28 and 29, 2010; 78 interventions appeared in front of us. It was two days of hearings, 22 hours of public hearings.

[*Translation*]

Several Quebec stakeholders had the opportunity to present to the Commission.

[*English*]

We've been accused of not allowing Quebeckers to participate.

[*Translation*]

We have included the list of all the witnesses that appeared before the Commission. It was a comprehensive public consultation process.

[*English*]

We listened in the first round of hearings to some of the issues. We took an additional amount of time to study some of the issues and allowed everybody additional time to provide further information. We carefully considered all the presentations given by all interveners, our staff, and everybody else in the analysis.

The hearing was widely disseminated both in Ontario and Quebec. In addition to this, CNSC staff made numerous presentations to city councils, mayors, and aboriginal councils. Anybody who wanted to know about this file and asked got a visit from our staff, who made a technical presentation about what was involved.

The next slide tries to explain the kind of analysis and science undertaken. CNSC staff totally evaluated the following safety areas, as listed here. It's important to understand that in doing this evaluation, they took into account all the presentations that were put in front of us.

On packaging and transport, all careful measures were taken into this proposal. The transport vehicle will not go faster than 30 kilometres per hour. The ship is a specialized nuclear qualified ship. It's only loaded at 25% of its capacity, and the crew is very well trained. The conclusion is that the packaging and transport comply with national and international regulations.

We've been accused of not doing environmental assessments. I have to tell you that we had legal opinions that there was no trigger under the CEAA for an environmental assessment. I know this is being contested now in front of a judicial review. But I have to tell you that we do such environmental assessments routinely on practically every project we do, from uranium mines to nuclear approval. It's the same CNSC staff who are doing the environmental assessments.

The staff evaluated some multiple worst-case scenarios, and the bottom line is that the risk for the environment....

● (1540)

[*Translation*]

In the worst case scenario, the danger to the environment and human health would be negligible.

The finding was the same for protection measures. We concluded the following:

[*English*]

The dose to the workers and members of the public would be less than 0.1% of the limit for members of the public, which is negligible.

We reviewed Bruce Power's emergency response plan and the International Maritime Organization regulations, and the commission concluded that the emergency measures are adequate.

You can imagine that there are a lot of organizations involved in sharing security, including Transport Canada, the Marine Security Operation Centre, the RCMP, the Coast Guard, the Ontario Provincial Police, and *la Sûreté du Quebec*.

[*Translation*]

We concluded that the safety measures were adequate.

[*English*]

In conclusion, the commission is satisfied that the transport can be completed safely and that the risk to persons and the environment is negligible. The shipment meets all Canadian and international regulations and requirements, and Bruce Power is qualified to carry out the plan.

Overall the plan is good for the environment. It's recycling clean steel. It's good waste management practice—it reduces the volume of waste by 90%—and it is safe.

I'd just like to remind everybody about our battle cry, if you like: The commission will never compromise safety.

[*Translation*]

We will never compromise safety. Thank you very much.

● (1545)

[*English*]

The Chair: Thank you very much, Dr. Binder, for your presentation. It was concise and very complete. Much appreciated.

We will go directly to questions and comments, starting with Monsieur Coderre for up to seven minutes.

[*Translation*]

Hon. Denis Coderre (Bourassa, Lib.): Thank you, Mr. Binder.

I might appear smart because this is the second time I have heard this presentation. Thank you for once again providing this report. As you are aware, there are potential problems with this initiative and hundreds of municipalities and aboriginal groups are opposed to it. There is also a huge perception issue. You have also stated that there has been misinformation. For all these reasons and because each party only has one opportunity to ask questions, the Committee will be asking you back after it has heard from other stakeholders. You are the subject experts and, as such, the Committee will be seeking clarifications from you.

I have several questions now and may have others later. I have read your whole report on the rationale underpinning your decision.

First of all, why was your decision to award the license based on data provided by Bruce Power? I heard one of your Director Generals, Mr. Régimbald being interviewed by Dutrizac on the 98.5 radio station. He stated that he had confidence in the scientific data provided to him by Bruce Power. The Commission has in-house expertise. You conduct evaluations. Did you request the opinion of experts from outside the Commission?

[*English*]

The Chair: Dr. Binder, go ahead.

[*Translation*]

Dr. Michael Binder: First of all, we always verify data. Our experts are in a better position to explain our process. We developed our own criteria. The Commission's conclusions were not based on the data provided to us but rather on a comprehensive study by our experts and presentations from all stakeholders.

Hon. Denis Coderre: This data was a baseline but was it verified by other stakeholders.

Dr. Michael Binder: It was indeed.

Hon. Denis Coderre: One of the potential issues is the impact on the environment. In 2006, Bruce Power conducted an environmental assessment on the storage of waste. The evaluation did not deal with the export of waste. That changes things a bit. You have stated that you are in compliance with the Nuclear Safety and Control Act. Why then, in light of the change made between 2006 and 2010, did you not bother to conduct a fresh assessment? Bruce Power was licensed to store waste but not to export it. Do you not think that that totally changes the basis of your assessment?

Dr. Michael Binder: I would like my colleague to answer that one. However, before he does, I would just like to point out that an environmental assessment is not a contract. It is a study designed to determine concrete action required. What did in fact change, was technology. Studsvik technology was not around in 2006. As a result, it was a matter of deciding whether we could use existing technology.

[*English*]

The Chair: Dr. Thompson, go ahead.

[*Translation*]

Dr. Patsy Thompson (Director General, Directorate of Environmental and Radiation Protection and Assessment, Canadian Nuclear Safety Commission): Thank you.

The 2006 environmental assessment was conducted for the retrofit of units at the Bruce Power plant. Waste management was only a small part of the assessment. The assessment was designed to ascertain whether the retrofit could be done safely without impact on the environment. The plan was to leave the steam generators in situ in the waste management facility at the Bruce Power plant.

The Federal Court has been very clear in several cases, specifically *Athabasca Regional Government v. Canada (A.G.) and Areva Resources Canada Inc.* This case pertained to the McClean Lake uranium mine. The Canadian Environmental Assessment Act applies to the planning process. The role of the regulatory body—in this case, the Commission—is to ensure that the process include an assessment of any new environmental risk reduction technology used as well as an evaluation of the technology's impact on the environment. This is what was done.

● (1550)

Hon. Denis Coderre: One of the problems I see is with recycling. The Bureau of International Recycling has clearly stated that recycled nuclear substances should not be mixed with other material. However, this is what will happen. These steam generators are to be shipped to Sweden. They will be recycled and the nuclear waste will then be brought back to be buried here. This material could eventually be reused. It will contain metal that will be recycled and mixed with other materials. Even though the shipping of nuclear waste is something that is happening already, this is the first time waste is being exported for recycling.

My time is short. Therefore, I would like you to answer two questions at once. How is it possible that a license has been issued for the outward shipment of the generators to Sweden but not for the return leg?

As you say in your report, we do not know what will come back to Canada. We have no information on the plutonium.

[*English*]

Dr. Michael Binder: I'd like to answer a couple of things.

First of all, we are not exporting waste. The nuclear waste is coming back to be buried. I really cannot understand what you are saying. The nuclear waste is coming back. What stays is the recycled steel, which is regulated by the Swedish regulatory authority and the EU regulatory authority. So the notion that they will allow steel to be turned into forks and knives, as some people say, is ridiculous.

Hon. Denis Coderre: Respectfully, why are you taking it personally?

Dr. Michael Binder: I'm not taking it personally.

Hon. Denis Coderre: I'm just saying that there will be some metal. There's some perception and there are some issues. It's nothing personal. You're an expert. Some metal will be recycled. Do you have confirmation that everything will be okay from that recycled metal? That's all I'm asking.

Dr. Michael Binder: The metal that will eventually be put into scrap metal is clean. It will not otherwise be allowed to circulate, because the Swedish and the EU regulators will not allow a radioactive product to go into normal steel. So it's very important to understand that the waste will come back and be buried where it was originally intended. All this plant is presumed to do is use the new technology.

[*Translation*]

The Chair: Thank you, Mr. Coderre.

Ms. Brunelle.

[*English*]

you have up to seven minutes. Go ahead, please.

[*Translation*]

Ms. Paule Brunelle (Trois-Rivières, BQ): Thank you, Mr. Chair.

Good afternoon ladies and gentlemen.

I, like other ordinary people, have a lot of questions about this initiative. I have here a copy of the resolutions against the shipping of nuclear waste passed by 61 municipalities, including Montreal and Quebec City, and by five Regional Municipalities. The Minister of Développement durable, de l'Environnement et des Parcs du Québec, Pierre Arcand, has criticized the way you operate. Do you not think that you have failed to provide people with sufficient information?

Bruce Power failed to inform people. It appears to me, that given the scale of the project, you were pretty cursory in your efforts. Minister Pierre Arcand pointed out to you in a letter that Quebeckers would feel the impact of any potential accident. To my mind, it is only natural that there be a public outcry. People are wondering why you authorized this shipment.

The public has always thought that waste should be dealt with where it is produced. Ontario chose nuclear power. It opted to operate nuclear power stations and, as a result, should dispose of its waste at home.

You contend that you are not setting a precedent. However, you are indeed creating a precedent in terms of the size of the generators. People are also concerned that other plants may be decommissioned and that the Saint Lawrence may become a nuclear waste highway. That would be quite simply unacceptable.

No matter your arguments about the small quantity of radioactive material and the low risk, the fact remains that there are dangers. People are worried. Why did you agree to conduct the assessment and authorize the project?

I really fail to understand. It seems to fly in the face of everything the Canadian Nuclear Safety Commission is supposed to stand for.

● (1555)

Dr. Michael Binder: There is a very simple reason for that. The operation is really very safe. Mr. Jammal met Minister Arcand. He might be shed more light on this issue.

Mr. Ramzi Jammal (Executive Vice-President and Chief Regulatory Operations Officer, Canadian Nuclear Safety Commission): Thank you, Mr. Chairman.

Ms. Brunelle, the Commission would not approve the shipment if it were not safe. Allow me to point out that the hue and cry about this project is because of the focus on the word “nuclear”.

The Commission’s decision is based on scientific fact. We conducted comprehensive analysis, which will be independently verified by the United States and Sweden. Consequently, an unsafe project would not get the Commission’s stamp of approval. It is now our job to ensure that people are clearly informed. We all have a leadership role in ensuring the Commission’s findings are based on scientific fact. As the Chair has rightly pointed out, the Commission assessed environmental impact using worst case scenarios. We even developed imaginary scenarios to ensure no impact on those living along the length of the river.

Ms. Paule Brunelle: Despite your contentions, there are concerns. Did you consider any alternative solutions as part of the project assessment process? We are aware, and you have confirmed this, that your role is to issue licenses. I have read your report, which is liberally peppered with arguments submitted by Bruce Power. You failed to mention the issue of plutonium. As a result, some people are contending that the shipment may exceed permitted limits. Your poor and scanty presentation undermines the message. You held two cursory public meetings. In addition, you failed to consider alternative solutions.

Is this due to shortcomings in the legislation? Should there not be an alternative solution? It appears to me that your role stops at assessing whether the project is dangerous and whether it can be authorized. However, it seems to me that you could have attempted to develop a plan B. Did you have a plan B?

Mr. Ramzi Jammal: I would like to make one thing clear. The approved project does not exceed international regulatory requirements, which is what you have suggested. The scenario developed and assessed by Commission staff looked at worst case situations. So, I would just like to stress that the Commission took very stringent steps and held Bruce Power to account.

We developed hypothetical scenarios. The first focused on non-fixed, loose matter inside the generators. We considered that all the material could potentially be released.

In the second scenario, the casing around the steam generator failed to prevent nuclear matter from escaping. In other words, there was a leak situation.

The third scenario focused on the ships transporting the generators. The ship is specially designed for the transportation of irradiated nuclear fuel. Therefore, it is designed to carry more highly irradiated nuclear matter than that contained in the steam generators. The vessel was designed to carry irradiated fuel, plutonium and reactor fuel.

The Commission considered all these issues. People have based their conclusions on one single sentence in our report. We were transparent in our submission of the assessment to the Commission. It is available to anyone. We concluded that as far as the casing was concerned, the substance was fixed inside, the steam generators were sealed and there was therefore no risk of matter leaking into the environment. Consequently, we deemed the project to be safe.

● (1600)

The Chair: Thank you, Ms. Brunelle. Your time is up.

[*English*]

Mr. Cullen, for up to seven minutes. Go ahead, please.

[*Translation*]

Mr. Nathan Cullen (Skeena—Bulkley Valley, NDP): Thank you very much, Mr. Chairman. Thank you everyone.

Do you think that there was sufficient public consultation on this specific project?

[*English*]

Dr. Michael Binder: Yes, we believe that anybody who wanted to speak to the subject had the opportunity to do so.

[*Translation*]

Mr. Nathan Cullen: Do you understand the public's concerns about the shipping of nuclear material?

[*English*]

Dr. Michael Binder: I think there's an inherent fear of nuclear or a lack of understanding of what's involved in that, but given the activity of this particular file, I think everybody had a chance to express their opinion about that.

Mr. Nathan Cullen: In your presentation you compared the generator to a radioactive pacemaker. Is that right?

Dr. Michael Binder: Yes.

Mr. Nathan Cullen: When did we stop using radioactive pacemakers in Canada?

Dr. Michael Binder: I think they're an old model, and we stopped using this particular model in the late eighties, I believe. But the point here is that the level of plutonium that drove those was far higher and it was running for years and years, compared to what's in the steam generator.

Mr. Nathan Cullen: So if anyone listening or in this room had the unfortunate need of a pacemaker, you wouldn't recommend them getting a radioactive pacemaker.

The question is this. I want to get to this apples and oranges comparison that you're doing. You said in your papers here today that more than 60,000 shipments of nuclear materials of some kind or another.... Are you seriously comparing a small box of medical isotopes that decay within hours to thousands of tonnes of nuclear waste with a half-life of 24,000 years? Is that the comparison you've offered to the committee today?

Dr. Michael Binder: You're putting words in my mouth. The comparison is that the radioactivity of some of the medical isotopes is by far higher than in the steam generator, and it's not the technetium, it's the moly that has a longer life. And there's cobalt and uranium and yellowcake, and there is gauge. Yes, millions of radioactive materials are being shipped every day across the whole world with a higher radioactivity than a steam generator.

Mr. Nathan Cullen: I'm not putting any words in your mouth. This is your own briefing deck that you gave to the committee today. Here are the massive radioactive steam generators. You've put that on the same page as the little box of medical isotopes, which decay quite quickly. You made the comparison. You said these were essentially the equivalent; people shouldn't be worried.

Dr. Michael Binder: It's not as massive as you say.

Mr. Nathan Cullen: This isn't big? It's the size of a school bus.

Dr. Michael Binder: Absolutely. But it's not all nuclear. It's only four grams pasted into the inner tube. The outside shell is clean.

Mr. Nathan Cullen: But all four grams are not created equal. We're talking about something that if there were four grams sitting on that desk right here, we'd clear the place. We'd put up a cordon and we'd not come back here for a long time if it were to spill.

My question is this. At the beginning of your presentation you claimed and made the assertion that for decades you've been an independent watchdog, essentially, for the nuclear industry. Is that right?

Dr. Michael Binder: Right.

Mr. Nathan Cullen: Did the CNSC do an independent test of the radioactivity of these radioactive generators?

Dr. Michael Binder: Yes.

Mr. Nathan Cullen: You took an independent test. You didn't rely on Bruce Power's numbers for the radioactivity—

Dr. Michael Binder: No. We actually went and sent inspectors to measure it.

Mr. Nathan Cullen: You went in. How does one do an actual assessment of something like this from the outside? Do you go around with a Geiger counter to see what the radioactivity is like?

Mr. Ramzi Jammal: Mr. Chair, multiple testing was done at multiple levels. It started with sampling of the inner tubes of the generators. It started with evaluation on the model of the distribution of the nuclear substance in the generators themselves. In addition to all the testing, yes, we did go out and do the external measurements. Once we understood the distribution and the composition of the nuclear substance on the inside, we were able to determine the total amount of nuclear substance, the characteristics of the nuclear substance. Hence we say it's tagged to the inside. This technology has been around for many years and is part of the normal process in the operations. Sampling is taken out of these tubes.

● (1605)

Mr. Nathan Cullen: Let me ask this. Have we ever shipped nuclear waste from a decommissioned reactor through the Great Lakes and the St. Lawrence before?

Dr. Michael Binder: We haven't shipped this particular steam generator, but we are shipping practically on a weekly basis, from OPG to Bruce Power, all kinds of low-level waste. We recycle things from when we dismantled the heavy water plant in Bruce, when we dismantled the white shell material—

Mr. Nathan Cullen: But to my specific question, because the question was specific, have we never done this type of shipment before through the Great Lakes and the St. Lawrence?

Dr. Michael Binder: We've never sent a steam generator before.

Mr. Nathan Cullen: So the question is this. There are many more to come down the line. One would assume this would not be the only shipment of decommissioned steam generators, considering the age of a number of the plants we're talking about. There are more to come. There will be more applications. Or is this it? This is the only time. This is the one exemption.

Dr. Michael Binder: No, there will be some, but very, very few. We can actually give you the number of them if you want the number. But remember, you refurbish nuclear power plants once every 30 years. So with many of the other ones, the steam generator is fine and they're not going to be sent anywhere. If this works, there will be some that will be sent.

If you look at Europe, they're doing it as a matter of routine. Germany has done it. They're using Studsvik as a facility.

Mr. Nathan Cullen: What concerns me is that just recently Bruce Power filled out its 2006 environmental assessment and in that assessment committed to keeping the contaminated material—the nuclear waste—on site.

You say new technology comes about. You contradicted the idea when you said that an environmental assessment—what's written on those pages—is not a contract with the public. I fundamentally disagree with you. Whether it be a mining company or a nuclear outfit that makes an application, and the governing agencies—in this case CEAA—or you agree to what's on the paper, to change the conditions is the changing of a contract. I'm not sure why you disagree with that.

Dr. Michael Binder: No. We have a principle that if you can do things better—it's called ALARA, as low as reasonably achievable. We try to continuously improve. For example, in uranium mines in operation, every time we can find a way of doing things better, we will look at that.

So yes, when the original environmental assessment was given, that was the plan at the time. All of a sudden when new technology comes in, or a proponent comes in with a new idea, we look at it. We would not approve it if we didn't think it was a good idea.

The Chair: Thank you, Mr. Cullen.

We go now to Mr. Anderson, and perhaps Mr. Dykstra if Mr. Anderson leaves him time.

You have up to seven minutes. Go ahead.

Mr. David Anderson (Cypress Hills—Grasslands, CPC): Thank you, Mr. Chair.

I want to acknowledge the three MPs who have visited us today: Pat Davidson, Ben Lobb, and Rick Dykstra. This is an important issue to all of them, and we're very happy to have them here at committee with us. And it's important that they are here.

I would actually like to come back to the question that Mr. Cullen was referring to. I'm not sure if he was trying to scare people or if he just didn't understand. But I want to ask you this. These are 100-tonne units. There are pictures of them here and they are large units. If they were smaller, would this be an issue? Would the shipping of this material be an issue?

Dr. Michael Binder: If you could squeeze those things into one of those internationally pre-approved packages, it would go through without anybody doing anything about this. All it may require is an export licence. That's it.

Mr. David Anderson: So if this would fit in a shoe box, this material could be shipped using the protocols that are in place that are used every day.

Dr. Michael Binder: Correct.

Mr. David Anderson: There would be no issue.

Dr. Michael Binder: Right.

Mr. David Anderson: And then just in terms of the other question you started to answer—and I think you got cut off—you said this type of work on these generators takes place in Europe all the time. Is that what you're saying? They're doing this fairly constantly and regularly.

Dr. Michael Binder: Yes, they have done recently.

I don't know if you can add some particulars to this, Mr. Jammal.

Mr. Ramzi Jammal: Thank you.

Correct. The Studsvik facility in Sweden is the most competent and the only available facility that is currently capable of separating the clean steel from the radioactive steel through that process.

There have been allegations made that there were other ways of doing things. The other ways are not recycling. You have to keep in mind that the current waste management is based on the three Rs: reduce, recycle, and reuse. As the technology becomes much more available and proven, then the three Rs are being applied.

So the Studsvik facility is the only one currently that did successfully service European reactors, where they had higher activity steam generators shipped in from Germany in 2007—on barges, as a matter of fact—through inland waterways to Sweden for recycling.

● (1610)

Mr. David Anderson: Thank you.

I want to give my colleague some time here, so I'll turn it over to Mr. Dykstra.

The Chair: Go ahead, Mr. Dykstra.

Mr. Rick Dykstra (St. Catharines, CPC): Thank you.

Through you, Chair, I do have a question, after reading the report. Page 9 talks about the requirement for a special arrangement. I wonder if you could clarify why a special arrangement is necessary under section 5.

Mr. Ramzi Jammal: The special arrangement is required in order to prove the safety equivalency as if you would put those generators into a pre-approved package. That's the intent of a special arrangement. In the absence of an existing pre-approved packaging, you will carry out the assessment of the special arrangements in order to give the safety equivalency that exceeds it.

We take pride, I will say, in a CNSC staff assessment that said we surpassed the international requirements. As a matter of fact, we have a declaration from the World Nuclear Transport Institute that in its conclusion said Canada and the CNSC have surpassed the good practices and international requirements. That's the letter from the WNTI.

Mr. Rick Dykstra: It would probably be nice to have a copy of that letter. If the committee doesn't have it yet, it would probably be good, through you, Chair, to make sure that each member of the committee has a copy of that.

In reference to your comments about international standards and having exceeded them, I noted also that page 14, paragraph 47 speaks to the transfer of similar material from Germany to Sweden. I'm wondering if one of you could provide us with a little more detail in regard to that transfer of similar-type material on a ship from Germany to Sweden. Tell us how that happened and in fact how it compares to what this shipment will be like.

Mr. Ramzi Jammal: Thank you.

In terms of the shipment from Germany, let me start first by making two comparisons. Those steam generators that currently the proponents have applied for have been decommissioned for several years. The shipment that did take place in Germany was a recent removal of those steam generators and the pressure tubes, hence they had a lot higher radioactive substance and they were much more radioactive. So the doses to the outside were a lot higher than what they were for these generators. Hence they had to apply exactly the same special arrangements that considered the transboundary transfer of those steam generators, and it was shipped by land, by inland waterways, and by sea to Studsvik. Again, I'm repeating it, in the inland waterways, these steam generators were put on a barge.

In our assessment, we went beyond the requirements, hence we put in the requirement that they should be in an irradiated nuclear fuel category ship.

Mr. Rick Dykstra: While the levels were higher in the material that was shipped from Germany to Sweden, while the travel was more difficult from Germany to Sweden than it will be from here to Sweden, you still, as an organization, went to make sure that the trip and the transfer would actually exceed what happened between Germany and Sweden.

Dr. Michael Binder: That is correct.

Mr. Ramzi Jammal: I'll read, Mr. Chair, the conclusion of the World Nuclear Transport Institute, which says:

> According to the information provided, it appears that the transport of sixteen steam generators from Canada to Sweden follows the current industry practice for the safe transport of large component, and in some instances exceeds it (in particular, in using an INF [which is irradiated nuclear fuel] ship on the one hand, and when there is practically no radiological risk for the population and the environment on the other).

● (1615)

Mr. Rick Dykstra: Was there any type of incident in the transfer of material from Germany to Sweden at all?

Mr. Ramzi Jammal: None—reported anyway.

Mr. Rick Dykstra: Could you explain the difference between heavy and light water reactors?

The Chair: Go ahead, and you have 15 seconds to do that, Mr. Binder, so take all the time you need.

Voices: Oh, oh!

Dr. Michael Binder: Okay, then I will take it.

One is using heavy water and the other one is using light water. Within 15 seconds, light water is thus pure water, whereas heavy water is—how do I explain it—deuterium.

The Chair: Thank you.

We go now to the second round, four minutes each.

Mr. Tonks, go ahead, for up to four minutes.

Mr. Alan Tonks (York South—Weston, Lib.): I think Mr. Coderre....

The Chair: Okay. Mr. Coderre.

Hon. Denis Coderre: The answer, Rick, was yes, he can; he was able to explain it.

[*Translation*]

Mr. Binder, it has been suggested that the radiation from these generators is equivalent to a lung x-ray. Do you agree?

Dr. Michael Binder: Yes.

Hon. Denis Coderre: Are the workers not in danger? I understand the public's concerns. Afterall, the ship is carrying radioactive material. We have mentioned Ontario. You met representatives from that Province but what about Quebec? I would like you to tell me whether mayors and the Union des municipalités du Québec have indicated their agreement. I think that you should meet with the mayor of Salaberry-de-Valleyfield, Denis Lapointe, who is one of the intervenors for the Great lakes and the surrounding municipalities.

The first thing I would like to know is what steps you took to protect workers from potential radiation exposure? This is a legitimate concern. Secondly, I would like to know whether the mayors and the UMQ now support your approach.

Dr. Patsy Thompson: We conducted two types of assessments to ensure workers are protected. The first scenario we developed focused on the drivers of the trucks making a round trip with the 16 generators. We concluded that the worker would be exposed to 0.02 mSv. The annual maximum permitted public dose is 1 mSv. Consequently, drivers would be exposed to a very low dose. The second assessment focused on the ship's crew. They would be exposed to 1.8 mSv annually in the course of their work. The maximum permitted exposure for workers is 50 mSv per year. In both cases, workers are protected. They are, therefore, not exposed to levels of radiation that could be harmful to their health.

Hon. Denis Coderre: Have the UMQ mayors approved your assessment? Did you consult them after the fact?

[*English*]

Dr. Michael Binder: I have to be blunt. In my opinion, this is not about safety anymore; this is about anti-nuclear. There is a professional anti-nuclear organization that is preying off the fear of nuclear. Let's be realistic; they interfere. They signed—

Hon. Denis Coderre: Dr. Binder, respectfully, I know many, many mayors, and those mayors are not part of the—

Dr. Michael Binder: They all signed an almost identical petition, not written by them, but by some other people who scared the hell out of them about the possible doomsday scenario of an incredible kind of accident. Our conclusions are that this is a safe activity.

I can tell you that when we read some of those petitions, some of the statements about poisoning the Great Lakes water were outrageous. It is not true. It is not even close to being a threat to the drinking water of the Great Lakes.

The Chair: Mr. Tonks, you have a minute.

Mr. Alan Tonks: Thank you.

I have a couple of questions. Just cutting to the quick with respect to process...and having been a former mayor, I'm not anti-nuclear, so I don't think this is a demagoguery-implied question.

Would it have better satisfied the concerns that have been raised, and the context you have given us, if an application had been made under the Environmental Protection Act, where the onus is on the applicant to provide an analysis of different alternatives? I don't mean to imply that you exceeded your authority or anything like that. I'm not implying that.

But in terms of satisfying the public, would that process have played better in terms of objectivity and a rational analysis of the issue?

● (1620)

Dr. Michael Binder: It could be. It's hypothetical. But I can tell you that the CEA Agency itself does not believe this requires their type of EA. In fact they deferred it to us and said that as a responsible authority we should do the environmental review, which is equivalent to the environmental assessment.

For clarity, that is the way we do practically all environmental assessments under CCEA. If you asked me would it have been better if we did a screening assessment under CCEA, our staff believe they have done that. It wasn't under the umbrella of the CCEA, but it was totally equivalent to CCEA's.

The Chair: Thank you, Mr. Tonks.

We go now to Mrs. Davidson, for up to four minutes

Please, go ahead. Welcome to the committee.

Mrs. Patricia Davidson (Sarnia—Lambton, CPC): Thanks very much, Mr. Chair.

And thank you for your presentation this afternoon.

My riding is Sarnia—Lambton. I have had several concerns expressed to me, so I'm very interested to hear what you have to tell us today, and to hear the science behind the decision that has been made.

There are a couple of things I would like to ask you about. You say you've done the extensive environmental assessment and review. You've evaluated the multiple worst-case incident scenarios. I think you said that even in the worst-case scenario the public dose would be less than 1% of the public dose limit per year.

When you're evaluating the worst-case scenario, how do you evaluate the threat to drinking water? You've made some comments today about there being no threat to the drinking water of the Great Lakes.

Dr. Patsy Thompson: Essentially, we looked at the characteristics of the steam generators in terms of the content of radioactivity and the characteristics of the generator in terms of the radionuclides, which are not soluble, so it's a coating inside the tubes that is not soluble in water. There are plates that are welded shut, so there is no foreseeable manner in which the plates would fall off. Essentially we looked at those characteristics, and in our evaluation we looked at scenarios where the spikes....

Despite those characteristics, we made the assumption that radioactive material would find itself in water, and we looked at what the consequences to drinking water would be and hence to people who are drinking water. All those scenarios looked at steam generators falling into the Great Lakes or looked at the St. Lawrence or Owen Sound. We looked at the dispersion of material, contamination of drinking water plants, and what the consequences would be.

Even considering what is not possible because of the characteristics, no one would be exposed to levels of radioactivity that would approach the limit set for drinking water standards. No one would be at risk in terms of health.

Mrs. Patricia Davidson: Thank you.

Dr. Binder, you said they had never shipped a steam generator before, or anything of this size, on the Great Lakes system, but has a package with comparable nuclear activity been shipped? I don't know the correct terminology. I'm talking now about activity as opposed to size.

Dr. Michael Binder: Absolutely. There have been quite a few, not only this but also on the U.S. side. If memory serves, the U.S. shipped steam generators on a barge. All kinds of materials are being shipped that are at a much more radioactive level than these particular steam generators.

I don't know, Mr. Jammal, if you want to elaborate on that.

Mr. Ramzi Jammal: Sure. Our president mentioned the fact that there have been shipments on barges on the Michigan side of the lake. We have the list here. I can provide it for steam generators from Hancock's Bridge, New Jersey, to Barnwell, South Carolina. Unit after unit after unit was safely transported on the Michigan side of the lakes.

● (1625)

Mrs. Patricia Davidson: Perhaps you could give that to the clerk and it could be dispersed to the committee.

If I have any more time—

The Chair: You do not, Ms. Davidson, but thank you for your questions.

We go now to Madame Brunelle, for up to four minutes.

Go ahead, please.

[*Translation*]

Ms. Paule Brunelle: I will be sharing my time with Mr. Pomerleau.

Mr. Binder, I would like to pick up on a point you made. You clearly stated that if this shipment of nuclear waste goes well, further shipments may follow. As I see it, you are admitting that there would be a precedent. This worries me.

I would like to reference a separate multi-year initiative by the Nuclear Waste Management Organization to identify a Canadian waste burial site. Apparently, the Canadian Shield would be the best place. I am sure you can see my concern. Would any waste disposal site in eastern Canada mean that the Saint Lawrence would become the main route for the transportation of nuclear waste? You have indicated that if this project goes well, it will lead to many more waste shipments.

Dr. Michael Binder: No, we are talking about a different type of waste. I would ask Mr. Jammal to provide more detail on this.

Mr. Ramzi Jammal: The Chair put it very well. The current situation is that there are no pre-approved packages to house these materials. It is quite routine for all reactor spent fuel to be shipped in a safe manner. Once the fuel has been spent, tests and checks are required to ascertain whether changes have to be made. This type of material is currently transported by... Is some of it being shipped through the Saint Lawrence? Potentially, it is. However, the shipment process is on going. The Commission intends to hold public hearings, conduct an environmental assessment and make a decision. Waste needs to be centralized. Every country is facing the same situation. They either have to designate a site or store the waste.

Mr. Roger Pomerleau (Drummond, BQ): Thank you, Mr. Chairman.

Thank you very much for being here today. I, like many of my colleagues, attended your presentation on the technical aspects of the overall project. Thank you. It was very interesting and highly informative.

I am sure you are aware that when it comes to the law, there are two crucial tests. My example is the law but the concept applies just as well to science. There must be legitimacy and an appearance of legitimacy. I take no issue with the legitimacy of the science-based process you have developed nor with the explanations you have provided. However, Quebeckers clearly do not perceive the science of the current project we are discussing as legitimate. The science does not appear to stand the test for all sorts of reasons. There are thousands of people who are frightened and seriously worried about this project. We are told that studies have been conducted and that the entire process is based on scientific fact. However, I would just like to point out that there are hundreds of example of problems arising from products deemed safe by scientists. Thalydomide was given the green light by scientists as was asbestos and UFFI. People do not see scientist approval as an absolute guarantee.

Although it is not part of your mandate, how do you think you can rally people to the project in its current state?

Dr. Michael Binder: The people against this project are the same ones who are against uranium and Gentilly-2. They have always opposed the nuclear industry. Safety has nothing to do with it. It is really an issue of opposition to the nuclear industry. It is a genuine challenge.

● (1630)

Mr. Roger Pomerleau: I see. Nevertheless, as you yourself have said, the fact remains...

The Chair: Thank you, Mr. Pomerleau.

Mr. Roger Pomerleau: ... that you are totally open to other transportation methods. To what extent do you think transportation needs will increase as Ontario's nuclear plants are decommissioned?

Dr. Michael Binder: I do not know. I think your question would be better directed to Bruce Power.

The Chair: Thank you, Mr. Pomerleau.

[*English*]

Finally, we go to Mr. Dykstra for up to four minutes. Go ahead, please.

Mr. Rick Dykstra: Through you, Chair, one of the issues that I found striking after reading the report was that there was this discussion around what was actually going to be on the ship itself and that it would be loaded to capacity. Could you in fact clarify as to how the determination was made? And basically, what is going to be the capacity with respect to the ships themselves in terms of what they are shipping?

Mr. Ramzi Jammal: Thank you.

The ship itself, as I previously mentioned, is an irradiated nuclear fuel qualified ship that will only, and only, be carrying those steam generators, and as a matter of fact, there are only 16 of them. The volume that's being transported represents 25% of the ship's capacity. As part of our staff evaluation for the recommendations to the commission, we took into consideration not just the volume of the cargo itself, but we also took the weight capacity of the ship. We measured. We spoke with the St. Lawrence Seaway Authority on the weight of the ship itself, and it's fully safe with respect even to the lowest or shallowest end as it passes through the locks.

Mr. Rick Dykstra: It was referenced earlier about the comparison, and it's right in the report itself, actually, in paragraph 48, the comparison between medical isotopes and the generators themselves. I'd like to give you a moment further to comment on that, Mr. Binder, because I believe it's critical to giving people an understanding of what we're talking about in terms of safety and in terms of what the content actually is. I note specifically that while Mr. Cullen was speaking about what was inside the generators, actually the comment is, that "the exterior surface of the...generators has a lower...dose than a package of medical isotopes".

Dr. Michael Binder: Before I pass it on to Mr. Jammal, there are two quantities, if you like. That's why I think people are misunderstanding the comparison. There is the weight and there's the activity. The weight of the total radioactivity material inside a steam generator is about four grams, and it's diffused right through the whole piping. The activity in there is a different kind of thing, and when you use a Geiger counter outside the shell you measure it at one metre, because it's the standard of measurement of safety. So at one metre away from the steam generator, it's less than one metre away from a radioisotope box that does medical isotopes. Basically, that's really the comparison we're trying to make here. In terms of safety—and that's our number one concern—this is safer than some of those boxes that have been shipped all around.

Mr. Rick Dykstra: Has anyone in the country ever written, called, or submitted to you a concern involving the safety around isotopes?

Dr. Michael Binder: No one has, to my knowledge.

Mr. Rick Dykstra: Thank you.

The Chair: Thank you, Mr. Dykstra.

Thank you very much, ladies and gentlemen, for coming today and giving us some very helpful information. It's very much appreciated.

I will suspend while we....

A point of order, Mr. Coderre.

[*Translation*]

Hon. Denis Coderre: I would also like to thank the Commission. However, we will be hearing more witnesses. They will require clarification. Consequently, I would like the Commission to be brought back.

[*English*]

The Chair: That's not a point of order. We can discuss that during future committee business at some point.

I will suspend the meeting and come back with our second panel in a couple of minutes.

● (1630)

_____ (Pause) _____

● (1635)

The Chair: We resume the meeting with our second panel. From Bruce Power we have four panellists, starting with Duncan Hawthorne, president and chief executive officer. We have Norm Sawyer, chief nuclear officer, Bruce A. We have Frank Saunders, vice-president, nuclear oversight and regulatory affairs; and Patrick Lamarre, president, SNC-Lavalin Nuclear Inc.

Welcome very much, gentlemen.

I understand, Mr. Hawthorne, you will make the presentation.

Go ahead with the presentation, please.

Mr. Duncan Hawthorne (President and Chief Executive Officer, Bruce Power): Thank you.

Good afternoon, everyone, and thank you for the invitation.

I'll start by apologizing to the translator, because my accent normally causes a bit of interest, but I'll try my best.

Voices: Oh, oh!

Mr. Duncan Hawthorne: Obviously I've listened with interest to the searching questions the committee has already asked of the regulator, so I don't intend to reprise all of that. Let me start by introducing what Bruce Power is. I'm sure you may be aware of some of these facts.

We are Canada's only private sector nuclear operator on the shores of Lake Huron and we operate North America's largest operational nuclear facility. As this topic brings about, we are in the process of refurbishing and returning to service 1,300 megawatts of nuclear plant that was retired from service some 15 years ago.

As part of the process, of course, we do have very clear regulatory guidelines governing everything we do, frankly, but as we went through the decision-making on the return to service of these units, we did go through the environmental assessment process that preceded our project, which commenced for real in late 2005.

The first slide gives a bit of background. When you turn to slide 2 you can get a sense of the magnitude of the activity that represents this refurbishment project. We are replacing many of the major life-cycle components, including all the reactor core material where we are dismantling all the reactor pressure tubes and calandria tubes and all the reactor internals. We are cutting them into small pieces and storing them on site.

One of the unique features of this project is that each of our reactors has eight steam generators. If you consider the picture you're looking at on slide 2, the four square blocks equate to the four reactors. Units 3 and 4 are in operation, and if you notice the third one from the left, you see a large crane parked outside unit 2. It was through the use of this crane that my colleague, Patrick Lamarre from SNC-Lavalin, took on board the project to remove these steam generators from their location and to replace them with new ones.

As was mentioned previously, of course, many elements of this project went into the planning phase. Everything we do in the industry is governed by two things: first, a commitment to meet our regulations; and second, to seek continuous improvement.

Dr. Binder mentioned the whole principle of "as low as reasonably achievable", the ALARA principle. It's one that I'd say governs the very safe operation of Canada's nuclear industry. We should recognize that we have an industry with a stellar safety record, and it compares very well with the nuclear community internationally. I can say that because, as my accent would let you detect, I started my 40-year career in this industry in a different place, so I know what U.K. standards look like, I know what U.S. standards look like, and I know what Canadian standards look like. So I'm able to give some degree of objectivity to how the Canadian nuclear industry compares with others.

On slide 3, we're trying to give a principle here. As I said, I'm not trying to talk about the half life of radioactive isotopes, because, as was just pointed out, I can tell you the difference between heavy and light water reactors too and eat up an entire hour of this committee hearing. This can be a very complicated subject, or it can be a simple subject based on good practice and principles.

This diagram here we call "The Right Thing to Do", but this is not a Bruce Power diagram. This comes from international standards and procedures. This is the internationally accepted mandate that all of us have to minimize our environmental footprint. It's true in domestic waste today where we consider what our standards looked like 20 years ago when we did not segregate our domestic waste, and look at where we are today: we separate plastics, we recycle, we turn plastic water bottles into chairs. We do many things to reduce our environmental footprint. No surprise then that the same obligation is placed on the nuclear industry.

As we continue to evolve our thinking, we all have an obligation to reduce our environmental footprint. So when we talked about the possibility of storing these steam generators—and to answer the question someone will ask, if we refurbish all these units on our site, there will be 64 steam generators: eight times eight. We've done two, so that gives us 16 steam generators.

● (1640)

Our intention would be to refurbish all of these units as part of Ontario's long-term energy plan. A critical part of securing the extra life will involve replacing all 64 steam generators over the next 20 years.

Clearly one of the issues we have is whether it is environmentally responsible. Is it the best option we can think of to build 64 buildings, which look very similar to the size of this room, for the sole purpose of storing these steam generators? For within that environment, we are more than aware that there are four grams of radioactive isotope material inside a 100-tonne vessel, which has to be secured and looked after for a very long time.

That was the option open to us. That was the bounding option and our planning assumption for environmental assessment.

But none of us can be satisfied that's the best we can do. As we looked to international practice, we saw a number of utilities facing the same timetable as us, the same requirement to replace many of their aging components. And we started to see a change occur. Rather than store things for the long term, people developed techniques and strategies and approaches.

In fact, Studsvik is a world leader in this, both in their place in Sweden and also in the U.S., where they're going through a very sound environmental practice. As we look at that, this is not about commercial gain; it's about the right thing to do.

Would I like this facility to be right next door? Sure, I would. But that's not the case. It's a unique facility, created for a special purpose, to manage a high volume of these sorts of activities. When we understood exactly what their process looked like—we saw their international standards and the regulations they operate in—it became a credible option for us.

The next thing we had to do was consider how we move these steam generators from their place on Lake Huron to the facility in Sweden. How do we do it safely and responsibly? It was mentioned previously that the regulations are mature in this regard; they're not new regulations created for this purpose. They are regulations that have been in place for a very long time. They are tested regularly, and they are enacted and enforced regularly.

The difference, of course, in this situation is that we cannot fit steam generators into the standard packaging. This has been said already here today, and it was clear in the regulatory hearings. Were it possible to fit a slab steam generator in an approved standard package, that would have occurred and it would have gone. Actually for Bruce Power, the same activities that we undertook would also have occurred.

Moving large components in our community creates the risk of distorting traffic flow and affecting a small rural community. When we embarked on this project, we treated that as being the issue. That was the disruption we were going to create in our community. We treated it in the same way when we moved the new steam generators in. The reason for that was because we were already comfortable that the radioactive nuclides met all of the regulatory standards.

Of course, when you begin that consultation, you run the risk of attracting other attention, for different reasons and different intent. I can tell this committee that our purpose was to look at this triangle of environmental footprint and try to move up the pyramid. That's the right thing to do.

When I talk about our activities, I can say we're obviously not at all immune to the public sentiment. We're not idiots. We know what's happening. We can see a number of important things. Firstly, very responsible elected officials are expressing concern, which is entirely what they're elected to do. It's not just in this room but in every municipality along the route. I have no problem with that—none whatsoever. The problem we do have, and the problem we have run into, is that it's always easier to alarm than it is to inform.

We have tried manfully to inform. We have issued documents like this: “The Right Thing To Do”. We've explained exactly what we do. We have set up websites. We've had mailshots. We've held open house meetings. We have tried our best to deal with those issues. I don't suggest for a moment that we can be everywhere and we can convince every person. I've been in the industry a long time, and I never expect unanimous consent. It will never happen.

The question we have to answer is whether we have done all that's reasonable given the actual intent of our activity.

● (1645)

As I say, if you start on the basis that this is a low-level radioactive activity with marginal risk, then the amount of consultation is affected by that. We have gone far and beyond that as an attempted response to the sentiment.

As I say, I fully understand. Some very well-regarded public figures have expressed concern. I get that. I do understand that. But I would hope—it's always been my hope—that Canadians have comfort in the strong regulatory body that exists. Just because the CNSC agrees with us doesn't mean I've got my hand up their back. It's never been the case, and it never will be the case. A good licensee always needs a strong regulator. It's always been so. It gives the public confidence. It gives us the confidence that we know where the benchmarks are. Good regulations do that for us.

As I say, I can talk at length about the half-life of isotopes, but I don't think I'd be doing a service to the committee. All of those things were fully dealt with in a commission hearing.

I'm very open to answering any questions and concerns that people have. If you want to talk about the science, we can do that too.

I want to reassure you that the basis of what we're doing is grounded in good environmental policy. You could not enact good environmental policy while putting Canadians at risk in the process.

We have reassured ourselves of our ability to seal these steam generators, to characterize them, to transport them, and to deal with them in a responsible way. That's what I believe we were tested on in the regulatory proceedings. I believe we passed that test.

Thank you.

● (1650)

The Chair: Thank you, Mr. Hawthorne, for your presentation. It was very helpful.

We will start the questioning with Monsieur Coderre, for up to seven minutes.

Hon. Denis Coderre: Thank you very much, Mr. Hawthorne. Believe me, you don't have an accent at all, so we can understand each other.

There are some questions. Basically you have your permit, so it's not about hitting you with it. You have your permit. But there are some specific questions I'd like to ask about the history of Bruce Power vis-à-vis what it has done in the past, what's going on now, and what will be the future.

With what you just mentioned, we're talking about 64 generators now; we're not just talking about 16. So eventually you will ask for other permits.

My first question is more specific to the Canadian Nuclear Safety Commission proceedings. It says here that you omitted to talk about plutonium in your demand at the beginning. Why?

Mr. Duncan Hawthorne: Actually, that was discussed at some length. It was simply a transposition error. It wasn't an error in the calculation. It was a transposition between one document and another.

Hon. Denis Coderre: Okay.

Mr. Duncan Hawthorne: It didn't affect the calculation.

Hon. Denis Coderre: Secondly, you said you've consulted a lot of people, but afterwards.... I don't believe, like Dr. Binder, that there's necessarily a conspiracy theory. You met politicians, mayors, and their role is to represent their people. If they fear some issues, well, this is a first. It's big.

I'd like to go with that first. In 2006, in the beginning, we were not supposed to transport them to eventually be recycled. Now we're talking about going from 16 to 64.

Would it be better for Bruce Power to import the technology and do it in the field, instead of transporting them to Sweden? And why is it not the United States? What was the reason?

Mr. Duncan Hawthorne: There are probably three questions in there—

Hon. Denis Coderre: You can do it, I'm sure.

Mr. Duncan Hawthorne: —so let me start with the first one.

We did consult, but it was against a framework, as I said earlier, of what we intended to do. Later this commission will hear from mayors in the municipality of our facility, and those people were consulted through many of our normal activities. We went to county council. We explained what we're doing. We asked for advice from their roads engineers in terms of what the best route might be. We asked for assistance in terms of picking the right time that would be of least disruption—and this is really for road transport. You have to remember that we are all engineers and scientists, so we look at this as good science. We meet all the regulatory standards, but we don't want to disrupt our communities. We consult with them more about the movement of large loads through their community. That was the nature of our consultation. I'm sure the mayors themselves will establish that.

Once it became obvious, however, that there were concerns about the shipment itself and the seagoing part of it, then we started to recognize there was a broader communication challenge for us. Frankly, we believed that much of that communication challenge would be met by the pretty unusual, I should say, CNSC one-day hearing, because that wouldn't have been typical either. The nature of the package would have required the signature from a designated officer. I'm not sure that came across particularly in Dr. Binder's presentation, but had it not been for your public sentiment and other things, there would never have been a one-day hearing, which became a two-day hearing. And really, that was in response to this public concern and anxiety, and as I said earlier, I understand that.

You know, we sought to go out and engage people, and the way we did that is we used polling; we did our website. Latterly, to be honest, we used someone who has a better French accent than me and my chief nuclear officer, Norm Sawyer, to go and speak to French-speaking people so that he could explain in a better manner than I could exactly what we're all about. Did we go everywhere? No, we didn't.

In terms of our facility locally, one of the things you have to recognize is there are two groups at work here. Firstly, we don't have enough business in ourselves to create a facility that would manage this, because although you see these large units, there isn't a lot of activity to be dealt with. It's a small amount of work, so it wouldn't be reasonable for someone to set up a business to do that.

Secondly, you're actually not taking the benefit of all of the best practice and industry experience. There is a facility in Sweden that has actually done this for lots of different types of steam generators. It has developed an expertise. So to start again from the beginning would ignore all of that added value.

For those reasons we chose to do this.

● (1655)

Hon. Denis Coderre: I only have two more minutes.

First of all, under chapter 162, under “Security”, it says that for questions linked to the security of the site, the commission received distinct, protected documents that were examined in camera. Without saying specifically what those documents were, what kinds of documents were they?

Mr. Duncan Hawthorne: Well, obviously everything that's done under security in the Nuclear Safety and Control Act is done in camera for obvious reasons, to protect our nuclear installations. But typically, we're asked to provide assurances on what security arrangements are in place for the movement. What security arrangements are in place for road and seaway? What does our emergency plan look like? The emergency plan was more public, but particularly.... You have to remember that one of the issues—and I can say this without breaching any rules—that the whole conversation is about is if any of this material is capable of being recovered and reused in a malicious way. Is there anything like that? Those are the kinds of questions you'd expect to be asked.

Hon. Denis Coderre: Mr. Hawthorne, you said, rightfully, that you don't do it on the field because it's a matter of business. So you're an industry. It's a matter of business.

My business is safety. What is the accountability framework to make sure that it will be safe and those transports will be safe? Who are you accountable to?

Mr. Duncan Hawthorne: Yes. Obviously the responsibility for safety throughout is mine. We are the proponent, so Bruce Power has the responsibility for that. We've clearly engaged people who have experience and expertise in those areas, so there are firms that have been engaged to manage the transport. Of course, anyone who knows anything about naval situations will realize the captain of the ship is in control of the ship, but all of the arrangements about the ship, all that has been said about the ship itself, is a—

Hon. Denis Coderre: So if it sinks, you are the last one, right?

Mr. Duncan Hawthorne: We still have responsibility for everything. The point I make is that whether or not it's good weather to set sail in, as captain we are responsible. We are the proponent, and we understand our obligations in that regard.

[*Translation*]

The Chair: Thank you, Mr. Coderre.

[*English*]

Madame Brunelle, for up to seven minutes.

[*Translation*]

Ms. Paule Brunelle: Thank you.

Good afternoon gentlemen.

Correct me if I am wrong, Mr. Hawthorne, but I think that your nuclear energy generation license requires you to specify the way you dispose of waste. Did you decide from the outset to ship the generators through the Saint Lawrence?

[*English*]

Mr. Duncan Hawthorne: I believe the question relates to the decommissioning plan for a facility. When you're granted an operating licence in Canada, you also have to deal with the construction, operation, and eventual decommissioning. It's not specific in terms of how you treat the waste. The key part, more often than not, is to produce a plan that talks about how much material will constitute waste: how much of it will be low-level, how much will be intermediate, and how much will be high-level. It seems to me that for fuel we have no long-term solution right now, if I can say that.

The intent of a decommissioning plan is to show a complete story but also to make sure that the costing is properly allocated. As a licensee, we have an obligation to make sure that funding is available. It's a slightly different intent. It doesn't talk about how you take it apart; it's more about what constitutes the plant you will be taking apart and how much it might cost.

● (1700)

[*Translation*]

Ms. Paule Brunelle: Fine. You say that there are two facilities that recycle your type of waste, one in Sweden and the other in the United States. The United States would be a better choice and would avoid you having to ship through the Saint Lawrence. This would suit me down to the ground.

Have you developed a plan B for the disposal of the waste from these generators? Are you shipping through the Saint Lawrence because it is less expensive?

[*English*]

Mr. Duncan Hawthorne: Sorry, I should have explained that Studsvik has two facilities. I was trying to explain their international reputation. The facility in the U.S. is not equipped to do this activity. They have different business streams. The facility in the U.S. does not do separation of steam generators, etc. Sweden is the only place for that activity.

As I said before, we use the St. Lawrence Seaway. The route is chosen because it's the only credible route to Sweden.

[*Translation*]

Ms. Paule Brunelle: What about insurance for this type of shipment? Not that there will be the slightest incident because you will not be shipping through the Saint Lawrence. Nevertheless, I would like to know what these policies cover and how much they cost. What are your obligations on this front?

[*English*]

Mr. Duncan Hawthorne: Yes, we do. One of the approvals for this vessel includes that they have regulatory approvals, and maintaining adequate insurance is a part of that. Effectively the insurance is taken out by the company that does the work. We, of course, have to pay the premiums for that as part of the cost. Part of their regulatory approval is also contingent on them maintaining good standing with their insurance to deal with a bounded hazard.

If you remember earlier, it was mentioned that this ship is insured for handling spent nuclear fuel. To give you an idea of what the difference is, this ship is rated—I don't want to use jargon, but I can tell you orders of magnitude—to carry two-million terabecquerels of radiation. That's two million terabecquerels. This steam generator package, for all of them, is five million. It's many orders of magnitude less than what the ship is rated to deal with.

[*Translation*]

Ms. Paule Brunelle: The vessel is just one aspect of the issue. However, it takes 10 years to train a pilot to navigate this highly difficult waterway. Part of the reason it is so challenging is because it is so narrow. This type of shipment raises concerns. I imagine that you are aware of this fact and that you will be using an officially-licensed Saint Lawrence pilot.

I have another question. You require authorization from the United States, the United Kingdom and Denmark for this initiative. Have you obtained this?

[*English*]

Mr. Duncan Hawthorne: Of course, the first approval is the one that we received from CNSC. That forms the basis of our request of others. So yes, we have applied. We're in the application process as necessary. There are a number of approvals that we require in stages. For example, the road transport one can only be applied for 30 days before you plan to actually move. We need the CNSC one; that's the prime one, after which we use that licence to then go to the Department of Transport in the U.S. and so on. So there's a cascade effect.

[*Translation*]

Ms. Paule Brunelle: One issue troubles me. Your company has stated publicly that if it were required to conduct an environmental assessment—which has been a possibility—it would abandon the project. Why? Would this entail additional costs for you? Have you lobbied the Canadian Nuclear Safety Commission against an environmental assessment?

[*English*]

Mr. Duncan Hawthorne: No, I don't know if anyone in our company said we wouldn't do it if it wasn't an EA. That's not the point. The point is that a regulatory certainty is a key part of doing anything in my business. The regulations have been assessed. There is nothing unless there actually is an environmental assessment trigger.

Separate from the whole issue about public consultation and concern, my point is that the regulations dictate when an EA is required and when not, and this particular event has been tested and there is no environmental assessment trigger.

● (1705)

[*Translation*]

Ms. Paule Brunelle: I have a brief question for Mr. Lamarre. Please tell us exactly why you are here. Is SNC-Lavalin involved in the refurbishing or decommissioning of plants?

Mr. Patrick Lamarre (President, SNC-Lavalin Nuclear Inc., Bruce Power): Our role in the Bruce Power plant refurbishment process was to replace and install new boilers. SNC-Lavalin's remit was to prepare for the removal of the boilers. The crane in the second photograph on page 3 or 4 is one we used in the process.

We are also here to tell you that the safety of our employees was a priority throughout the process. We monitored employee exposure several times a day to ensure that there was no contamination.

We were also responsible for ensuring that all the generator's openings were properly welded shut. We contracted Kinectrics, which does work on several nuclear plants throughout the World, to check for possible leaks from the covers installed on the boilers.

[*English*]

The Chair: *Merci*, Madame Brunelle.

Mr. Cullen, for up to seven minutes. Go ahead, please.

[*Translation*]

Mr. Nathan Cullen: Thank you very much, Mr. Chairman.

I would like to check one thing with you. The legislation currently requires only one official to sign off on the shipment of this type of nuclear waste, does it not? The current Act does not require public consultations.

[*English*]

Mr. Duncan Hawthorne: That's correct, for this level of activity.

[*Translation*]

Mr. Nathan Cullen: This seems a little strange, especially in the case of a regulatory body like the CNSC. Public consultations where there is no opportunity for a project to be turned down are not really consultations at all. The public normally expects the result of consultations to be either the approval or dismissal of a project.

These consultations were not really genuine consultation at all. The public was simply informed that the project had been approved. That is the reality.

[*English*]

Mr. Duncan Hawthorne: That's consistent with how the regulations are written. If that's an interpretation of the regulation, you're correct. There are many things that are delegated to the commission staff by virtue of the regulations that exist in Canada. If you ask me why that's so, there are many routine activities that take place time after time, and it would be just unworkable to have anything other than that. I'm not undermining your point; I'm just noting that this is how the regulations are created.

Mr. Nathan Cullen: Nor am I undermining that you folks have the permits under the law as they are considered.

I think some Canadians come to these meetings with a different set of expectations: if they are being consulted or they're being informed, and those are two different things. Consultation means "I may change my mind", or "I'll change the plan", but the law doesn't require that right now. This committee has to make some recommendations to government about how the regulation of your industry goes ahead, because as you said, there are more generators coming; there are more possibilities of transport.

About the environmental choice, from my understanding of the folks in Sweden, this is contaminated metal, right, that's being transported? The most contaminated pieces are sent back to Canada, the waste, but the metal is then reprocessed with as much as ten times the amount of steel; it's a form of dilution of the contamination. Is that right? Is that what the standard is?

Mr. Duncan Hawthorne: I wish I could draw you a picture. But the reality is, if you can imagine your kettle at home, inside you have a heating element. For the purpose of clarity, let's say that the heating element represents the steel tubes that are inside a boiler. What they effectively do is take the steam tubes and assume them to be contaminated. The rest of the kettle in my example would be determined to be scrap metal. It would have to pass a test that it is in fact scrap metal, in which case there is no radioactive element to it, and it would be free released.

Mr. Nathan Cullen: Let me stop you there.

The metal in the casing is not contaminated at all?

Mr. Duncan Hawthorne: Correct.

Mr. Nathan Cullen: It's not?

Mr. Duncan Hawthorne: That's the intention of this process—

● (1710)

Mr. Nathan Cullen: No. At the end of the day it's not contaminated, but at the beginning it is.

Mr. Duncan Hawthorne: No. We've confirmed that the outer shell is clean. This process will remove anything that may be on the outer shell with the intention of deeming that to be scrap metal.

That scrap metal for free release, not containing radioactivity, still has to be then melted down with other things in a ratio. So you're absolutely right about that, but the steel tubes themselves, the internal part, are very likely not to be dealt with other than to be reduced in volume and returned back to us. That's the whole issue here.

It's not simple—I said that from the beginning. I've tried my best to articulate that in this booklet, but really that is the difference. People expect that radioactive material is going to enter the scrap metal market, and that's not what—

Mr. Nathan Cullen: No, that's not my suggestion, and it seems to me that we'll need to get these folks in from Sweden to talk about it, because they're the experts.

Mr. Duncan Hawthorne: Of course they did appear before the commission, as Studsvik were themselves challenged.

Mr. Nathan Cullen: What's interesting is that the same company is trying to black out the names of the groups that are going to receive this metal at the end of the process. That's a battle going on in Sweden right now. So if it's such a great environmental or a clean choice, it's strange that the folks who are eventually going to reprocess this are trying to deny—but that's not for you; that's for them.

There is something strange that Mr. Binder, the regulator, said at the end of his testimony. You said we need a strong regulator. That's true. For your industry, you need a strong regulator. You said you also understand the concerns of people who are expressing worry. You can understand their being concerned. You understand the mayors and the six senators from the U.S. who have written with concerns.

The regulator was just in front of this committee and accused those same people, those six U.S. senators and the 300 mayors, of being anti-nuke. He said that the only people who are opposed to this have an agenda that is anti-nuke. I'll go through the blues and the testimony on this.

It seems strange to me that this would come out of the mouth of the watchdog, while the person who is actually dealing with the public and doesn't actually have that responsibility—it's the watchdog who does, primarily; that's their job. You say you understand the concerns of people, whereas the watchdog says that anybody opposed to this is expressing unfounded concerns and is scaremongering, fearmongering, in his words.

Mr. Duncan Hawthorne: I'm not going to try to speak for the doctor—

Mr. Nathan Cullen: It's a dangerous thing to do.

Mr. Duncan Hawthorne: —one, because he has spoken; two, because he's my regulator—

Mr. Nathan Cullen: Good choice.

Mr. Duncan Hawthorne: —but I'll speak for myself when I say that my characterization of things is a simple one. And you'll hear some of this. This committee will hear from mayors in our community. One, they better understand what we do, and two, they know us as parts of their community. That obviously has an impact.

The one thing I will say is that there is no doubt a significant amount of the concern expressed by well-intentioned and entirely appropriate elected officials and members of the public has been fueled by misinformation sent to them by anti-nuclear groups.

Mr. Nathan Cullen: Sure.

Mr. Duncan Hawthorne: And I would hope that those elected officials, faced with that dilemma of one set of information versus another, will have confidence in their regulatory process.

Mr. Nathan Cullen: Something this committee is interested in is this. Has Bruce done an economic analysis? Your initial promise to the public in 2006 was to bury these generators on site, not to expose the public to the generators. Have you done an economic analysis of the difference for you as an operator between keeping them all on site versus this plan to ship them to Sweden and then the waste back?

Mr. Duncan Hawthorne: First, I can tell you that there never was an intention to bury anything on site. They were not being buried on site. Those are special purpose buildings. I can tell you that actually as things stand today, it's more expensive to send them to Sweden.

Mr. Nathan Cullen: Can you make that—

The Chair: Thank you, Mr. Cullen. Your time is up.

Mr. Duncan Hawthorne: It is more expensive to send—

Mr. Nathan Cullen: Can you send that assessment to the committee?

Mr. Duncan Hawthorne: Yes. We were asked that in the hearings, and you will see that information, and the hearings—

The Chair: Thank you, Mr. Cullen.

Thank you, Mr. Hawthorne.

Mr. Anderson.

Mr. David Anderson: I have a point of clarification. Nathan said something about needing to invite the folks from Sweden. Mr. Hawthorne said that someone had appeared before the commission, but it wasn't clear who that was.

Mr. Duncan Hawthorne: It was felt to be important to allay some of the concerns and answer some of the questions about what happens to the metal—what this recycling and treatment look like. So the responsible project manager from Studsvik sat through all of the proceedings and provided a presentation on how they do it. In fact, the presentation on how it's dealt with is in our booklet, and I'll leave that if people like.

If you had read the record of the proceedings and looked at the information the CNSC reviewed, you would find there was a very detailed presentation and questioning of Studsvik.

● (1715)

The Chair: Thank you for the clarification.

Mr. Lobb, go ahead for up to seven minutes.

Mr. Ben Lobb (Huron—Bruce, CPC): Thanks, Mr. Chair. I'll split my time with Mr. Anderson.

First of all, I'd like to thank Bruce Power for attending the meeting today. Thank you for the integral part you play in the communities in Bruce, Grey, and Huron counties.

For the viewers at home who are watching in Canada from coast to coast, it's important to note that the councils of Bruce County, Grey County, and Huron County have all supported what you're doing, as has Dr. Lynn, the medical officer of health for Grey and Bruce. They support your initiatives.

I have two questions. I'll let you answer, and then I'll turn it over to Mr. Anderson.

The CNSC was very clear that no precedent is being set here. When we think of nuclear, this is a global community. There are certainly other nations that have endeavoured with this. Domestically, every day there are shipments of goods to and fro throughout the country. So I wonder if you could first speak to that.

Second, I think you make a good point here when you talk about the right thing to do. We know that Bruce Power is involved in the right thing to do, versus the easy thing to do. This is a very good case in point of Bruce Power doing the right thing. It's probably why you're a leader in nuclear around the world.

I wonder if you can respond to those questions.

Mr. Duncan Hawthorne: Obviously there's a lot of conversation about whether this is a first-of-a-kind thing. To a certain degree, in an attempt to try to simplify a complicated subject and reassure people, we give them examples of things that move around all the time. For example, consider the movement of cobalt, which occurs very regularly. Cobalt-60 is used in the production of isotopes. You asked the question earlier about molybdenum-99 isotopes. But it totally ignores the fact that in our facility today we produce something like 50% of the world's cobalt-60. It is harvested from our plant and moved around. So cobalt-60 moves around the seaways regularly, which from a radioactive point of view is much more significant.

As far as the movement of nuclear materials of a much greater radioactivity content, this is nothing like a precedent. But as was mentioned earlier, this is the first time for Canada that we've had large steam generators moving through the Great Lakes. That's why we're here. That's why I think there is a questioning attitude about what's there.

But it is the right thing to do. We are talking here about a massive volume reduction. We're going to reduce the volume of these components so that instead of filling 60 rooms like this, they will fit into a room half this size. That's the right thing to do. It has been tested and proven.

The Chair: Mr. Anderson.

Mr. David Anderson: Mr. Shory has one question, so I'll turn it over to him. Then I'll take the rest of the time.

The Chair: Mr. Shory, go ahead.

Mr. Devinder Shory (Calgary Northeast, CPC): Thank you, Mr. Chair.

I have been listening to this, and a quote came to my mind. I heard CNSC say that hundreds of tonnes of dangerous goods are transported every day. Specifically about these steam generators, they say that 100 tonnes was four grams of radioactive substance. I have heard that from the other parties also.

Is it all fearmongering? If there is any potential risk, what would it be?

Mr. Duncan Hawthorne: First, as I say, it's very difficult to start talking about radioactive half-lives of components. You can easily mention the word “plutonium” and people immediately take that to a different point. You have to ask how much and in what form.

I think Dr. Thompson answered the question placed by one of the committee members earlier, which was, what is the absolute bounding...what's the worst thing that can happen, whether credible or not?

The most incredible thing is that all 16 steam generators somehow get smashed apart, and remember that these are 100-tonne pressure vessels, massive structures in themselves. We are assuming that they all get smashed to smithereens, and every piece of radioactive inventory that was inside every one of those steam generators gets released into the lake, right outside the water intake for the people of Sarnia. That's an incredible scenario, but let's assume it happens. Even in that scenario, it would only achieve 40% of their maximum allowable limit for safe drinking water. It doesn't even get close. That is such an incredible scenario, I might as well be planning a loss of gravity event. It does not compute. But that's what we did in an effort to reassure people.

Chair: Mr. Anderson, go ahead for about three minutes.

● (1720)

Mr. David Anderson: Thank you, Mr. Chair.

I think the point you just made reminds us once again how sensitive this is. I guess I was concerned a while ago. I think as members we need to make sure we don't start to exaggerate testimony in order to try to get a news clip.

The CNSC seems to be satisfied that you are able to take the necessary precautions to move these generators. I want you to talk a little bit about the specifics of how you are planning to ensure the road safety of the generators, and then how you are planning to ensure the marine safety of those.

Please take a couple of minutes to talk about that. You have, but I want to hear some details.

Mr. Duncan Hawthorne: Obviously we have a situation under normal events, and a situation under failure events, if you can call it that. We're required to assess all of that.

Under normal activity, of course, we're working with the local municipalities on the road transport piece. The transport vehicle has to meet road transport standards. Then we're thinking more about the roads we take. We're thinking about whether we cross any bridges and whether they meet the load requirements. We're relying on county engineers and others to give us confidence in that. If we need to do some reinforcement, we do that.

It's not unlike what we did when we brought the new ones to site, because we have already transported 16 new steam generators, in fact 24, because we have some others in store. That deals with the road transport piece.

We also have OPP and local police escorts. This road transport vehicle moves very slowly, as you might imagine. It's five kilometres per hour maximum. It's a very slow moving vehicle. It's supported by police protection, and it travels a route that has been tested and approved by the county officials.

When you get to the boat itself, there are a number of issues as to the qualification of the boat, as to the loading arrangements at the dock, and the qualification of the crane, etc. It deals with storage on ship: how many you can put in, how you put them side by side. They will actually be locked into position there. Nothing else can be on the ship. The hold itself will be sealed so that no one can access during transit. All of the crew have to be qualified. They have to have radiological supervision available to them there. They have to have the necessary qualified people to manage en route. They also have to have an approved emergency plan that covers all of those scenarios that we talked about—if we dropped one into the hold, if the ship gets in distress, all of those things.

All of those elements, both under normal situations and accident guidelines, are all assessed along the complete route.

The Chair: Thank you, Mr. Anderson.

Just a very short question.

Mr. David Anderson: I'm interested in whether you can tell us a little bit about your emergency response planning and what's required.

Mr. Duncan Hawthorne: Obviously we have to think of the bounding case here. If it's an accident on the road that is in the vicinity of our site, we would obviously respond to that, along with emergency services.

There is an emergency plan in place already. There are lots of things that travel, so there's an emergency response plan that would fall in place here. That's already a tested, rehearsed thing.

Should it occur at sea, then again there's a response plan which involves a graduated response, if I can call it that, in terms of what has occurred. One form of response is whether it happened in a dock, on the Great Lakes, or out in international waters. But the plan and all of those elements have been tested.

The Chair: Thank you, Mr. Anderson.

Thank you to all members of the committee for your questions.

The bells should start ringing for the vote in just a couple of minutes.

Thank you very much, Mr. Hawthorne, and to all panellists, for coming and giving us the information we need to do a good study of this issue.

The meeting is adjourned.

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